


# INTEROFFICE CORRESPONDENCE



**Hawaiian Electric Company, Inc.**

March 28, 2008

To: David G. Waller  
From: George Willoughby   
Subject: HECO March 2008 Sales Update

Attached for your review is HECO's March 2008 sales and peak update. The March 2008 update projects no sales growth in 2008 above recorded 2007. Sales are projected to decrease by 0.2% in 2009, and then grow by an average 0.8% for 2010 – 2011, jumping to 2.3% in 2012 with the addition of expected load from the mass transit project.

The March 2008 update is 61 GWh and 134 GWh lower than the September 2007 update in 2008 and 2009, respectively, because of lower sales performance than expected in 2007 that has continued into 2008. In addition, the economic outlook for Hawaii worsened in the 1<sup>st</sup> quarter of 2008 based on the U.S. economy slipping into recession at the end of 2007 and persistently high fuel oil prices. The March 2008 update is lower thereafter by 200 GWh on average.

Sales performance year-to-date ("YTD") February 2008 has continued to disappoint in both the residential and commercial sectors with recorded sales only 0.5% above the same period in 2007 despite an extra leap year day in 2008. Adjusting for the extra day, February YTD sales are 1.2% below 2007. February YTD 2008 sales were 1.7% below the September 2007 update. Sales are expected to remain stagnant for the remainder of 2008.

The March 2008 update projects growth in sales to remain anemic from 2008 – 2009, and then begin to strengthen thereafter as the economy improves. Residential use per customer is expected to continue to decline with electricity prices remaining high, and while the growth in the number of customers is projected to continue on par with 2007, it will be at a much slower pace than experienced in the years before 2007. Non-residential construction is likely to contribute to commercial sector growth over the forecast horizon offsetting some of the impact of no gains in non-agricultural jobs.

Please let me know if you have any questions. This material was reviewed by senior management on March 7 and March 11, 2008 and is scheduled to be presented to other members of the executive staff on April 3, 2008.

Attachment

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**Hawaiian Electric Company, Inc.  
MARCH 2008 SALES AND PEAK UPDATE**

**Executive Summary**

The local economic outlook worsened in early 2008 as the U.S. economy slipped into a recession. Locally, construction activity slowed as the residential housing market receded and commercial construction activity peaked. Rising inflationary pressures and a stumbling visitor industry will likely contribute to a local economic slowdown. Even with a robust local economy, electricity sales stagnated in 2005, and continued to languish into 2008. Electricity sales February year-to-date ("YTD") 2008 were slightly above the same period in 2007, however, taking into consideration the extra leap year day in 2008, sales were about 1.2% below 2007 for the period. Electricity sales have declined for three straight years with no improvement in either the residential or commercial sectors. With fuel prices expected to remain high and the waning economy, the outlook for sales remains bleak in the short-term.

As shown in Exhibit 1, the March 2008 sales update expects sales to be flat in 2008 as compared to 2007, and decline slightly in 2009. Sales are then expected to slowly improve, growing by an average of 0.8% for 2010 – 2011, and then rebounding to 2.3% growth with the first phase of the mass transit project in 2012. The March 2008 update expects sales to be lower than the September 2007 update for all years of the forecast horizon. Sales are expected to be 61 GWh lower in 2008 and 134 GWh lower in 2009. For each remaining year of the forecast period, the March 2008 update averages about 200 GWh lower. The outlook for both the residential sector and commercial sectors are lower.

Weather and price appeared to be factors in recent sales performance with lower than average humidity and persistently high prices lowering sales. Sales appear to have been restrained by lower humidity, offset by warmer than average temperatures. Double digit percentage increases in electricity prices beginning in mid-2005 seem to have dampened residential use. While commercial customers generally have less flexibility, they appear to have reacted by conserving energy in order to control the impact of higher utility costs on their budgets. Energy conservation messages and increasing awareness of global climate change may also have encouraged lower use without regard to price.

The March 2008 update expects 2008 sales to be unchanged from 2007 levels, and decline by 0.2% in 2009. Residential use per customer is expected to decline as prices remaining high. The number of residential customers is projected to grow at a pace on par with 2007, but at less than half of the rate experienced in prior years. Non-residential construction is likely to contribute to commercial sector growth; however, energy conservation is expected to be a major factor holding down sales over the forecast horizon.

**Economic Outlook**

On March 21, 2008, after the economic outlook for this report was completed, the University of Hawaii Economic Research Organization ("UHERO") issued their *Annual Hawaii Forecast: Economy Grinds To A Halt*. UHERO's March 2008 outlook was much more pessimistic for the local economy than their December 2007 forecast. The outlook is lower

due to the U.S. economy sliding into recession and the continuing national credit market problems. Contributing to this weakness are soft local economic conditions with a faltering visitor industry and a weakening construction industry contributing to anemic job growth. UHERO projected a flat Hawaii economy for the next two years, with growth resuming in 2010. Economic forecasts reflecting the worsening U.S. economy were not available when the March 2008 sales update was being developed. However, economic variables used for the forecast models were adjusted downward on the expectation that existing economic outlooks were overly optimistic.

The discussion in this section of the report is based on materials prior to UHERO's March 2008 release with economists still expecting slower but positive growth.

The Hawaii economy is expected to grow moderately, but at a much slower rate than in the past few years. Jobs, real personal income and visitor arrivals are all expected to grow and inflation is expected to slow. Hawaii's unemployment rate remains among the lowest in the nation, although it has risen steadily over the last year. All of these measures are positive and reflects what local economists describe as a "soft landing" for the slowing Hawaii economy.

Externally, the U.S. economy is wavering on the brink of a recession, if not already there, fueled by the sub-prime lending crisis. The downturn in the housing market, signs of softness in the labor market and inflationary uncertainty all contribute to the growing concerns about the U.S. economy. Despite the less than positive outlook, the U.S. economy is still expected to realize year-over-year growth in 2008. The Japanese economy is also expected to grow, although at a slower rate than previously forecast and slower than in previous years.

#### U.S. Economy

The U.S. economy slowed rapidly at the end of 2007. After strong GDP growth in the second and third quarters of 3.8% and 4.9%, respectively, the "advance" estimate of 4<sup>th</sup> quarter growth was only 0.6%. The February 2008 *Blue Chip Economic Indicators* ("Blue Chip") consensus forecast for the 1<sup>st</sup> quarter of 2008 is 0.5%, increasing slightly to 1.1% in the second quarter. 2008 annual GDP growth is estimated at 1.7%, increasing in 2009 to 2.6% (as shown in Exhibit 2). This is compared to real GDP growth of 2.2% in 2007 and 2.9% in 2006. The forecast has been consistently more pessimistic over the last year although the expectation continues to be for slowly increasing growth through the end of 2009. The changing outlook results from, "weaker than expected economic reports, further signs of tightening credit conditions and continued turmoil in financial markets". The Blue Chip consensus also puts the odds of a recession at almost 50%.

Energy prices continue to rise as the spot price of West Texas Intermediate ("WTI") crude oil averaged \$72.32 in 2007. The Energy Information Administration's February 2008 short-term outlook projects WTI crude oil prices to average \$86.46 and \$81.67 per barrel for 2008 and 2009, respectively (see Exhibit 2). This is compared to the April 2007 projection of \$63.83 for 2008. However, the projection is a decrease from the average of \$93 per barrel in January 2008 and the expected average of \$87 per barrel in February 2008. The outlook reflects the projection of higher OPEC and non-OPEC production in the second half of the year that will be greater than the expected demand growth and resulting in some relief in the world oil market.

Rising oil prices continue to contribute to inflationary pressures. The Consumer Price Index (CPI) rose in December and January by 0.4% month-over-month following a 0.9% increase in November. Energy prices were up 0.7% in January following increases of 1.7% and 6.9% in December and November, respectively. The core CPI, which excludes food and energy prices, grew by 0.3% month-over-month in January following nine months of 0.2% monthly growth (see Exhibit 3). This is the largest increase in the core CPI since June 2006. The February 2008 Blue Chip forecast for CPI growth in 2008 is 3.0% compared to an overall CPI increase of 2.9% in 2007 and 3.2% in 2006.

The Federal Reserve ("Fed") continues to cut rates in an effort to stimulate the slowing US economy. After maintaining the federal funds rate at 5.25% since July 2006, the Fed has cut the federal funds rate five times since September 2007 for a total of 2.25% (see Exhibit 3). The most recent action was two successive rate cuts in a one week period at the end of January that totaled 1.25%. According to the Fed, the hope is that the rate cuts will help to promote growth over time. However, the Fed acknowledges that financial markets remain under stress, tightening credit is affecting both businesses and households, and the housing market continues to slow.

As shown in Exhibit 4, non-farm payroll employment in the U.S. dropped in January 2008. On a seasonally adjusted basis, the preliminary loss of 17,000 jobs was the first month of job losses since August 2003. The seasonally adjusted unemployment rate was 4.9% in January down slightly from 5.0% in December, the highest rates since 2005. These are signs that the once healthy labor market may now have been added to the list of troubling signs in the economy.

Average thirty-year mortgage rates dropped below 6% in January for the first time since the 3rd quarter of 2005. Since July 2005, rates have steadily declined from 6.7% to 5.8% in January 2008. In 2007, the seasonally adjusted annual rate of existing home sales declined from a high of 6,680,000 in February to a low in December of 4,890,000, which was 22.0% below December 2006 (see Exhibit 4). Meanwhile, the seasonally adjusted annual rate of new home sales also declined during the year from a high of 907,000 in April to a low of 604,000 in December, which was 40.7% lower than December 2006 (see Exhibit 4). According to the National Association of Realtors, the median price of existing home sales declined by 1.4% in 2007, the first such decline since they began tracking the data forty years ago. Problems in the sub-prime mortgage market, increased foreclosures in certain markets, tightening lending standards, re-setting ARMs and the decline in median home prices, all continue to contribute to the weakness in the housing sector.

In all, the overriding question regarding the U.S. economy is whether it is already in a recession, is it headed into a recession, or will the economy squeak by without a recession? Job growth and GDP growth were previously held up as indicators that the economy was still strong, but the drop in GDP growth in the fourth quarter and the report of job losses in January have added to the poor economic outlook for the U.S.

#### Japan Economy

Japan's economy is experiencing slow growth with indications of rising inflation as the economy weakened during 2007. The February 2008 Blue Chip consensus forecast predicts

1.4% real GDP growth in 2008 and 1.9% growth in 2009, following 1.9% growth in 2007. The Blue Chip forecast has been less optimistic throughout the year (see Exhibit 5) as growth is being hurt by slowing exports and declining domestic demand. Japan has also joined the global housing slump. Wages are falling and it appears that job growth is also slowing.

#### Hawaii Economy

As 2008 begins, local economists agree that the Hawaii economy, although slowing considerably, will continue an eleven year economic expansion. Jobs, real personal income and visitor arrivals are all expected to grow, while inflation is expected to slow. UHERO in its December 2007 forecast update moderated its projections for local economic growth in 2008. As shown in Exhibit 5, compared to the forecast issued in June 2007, the outlook for non-farm jobs was slightly more optimistic. The outlook for unemployment and real personal income declined, while inflation expectations remained unchanged.

The annual inflation rate in Honolulu for 2007 was 4.8%. This is a reduction from the rate in the first half of 2007 of 5.0% and the 2006 rate of 5.9%, which was the highest rate in fifteen years. Local economists expect that inflation will continue to slow, although it may take a few years to return to "normal" rates. UHERO's December outlook for inflation in 2008 is 3.8%. The inflation rate is expected to hold real personal income growth to 1.9% in 2008 a slight increase from the estimated 1.6% in 2007, but much higher than the 0.4% increase for 2006.

Activity in the housing market has visibly slowed, although prices remain relatively stable. In January 2008, single family home sales were down 13.3% and condo sales were down 22.5% versus January 2007 (see Exhibit 6). In 2007, single family home sales declined by 10.2% and condo sales declined by 13.8%. The 2007 median price of existing single family homes on Oahu was \$643,500, 2.1% above 2006, while the median condo price was \$325,000 or 4.8% above 2006. On the other hand, the January 2008 median price for single family homes was \$600,000, flat year-over-year and down 0.2% from the prior month. The median price for condos was \$324,000, which is up 1.3% from last year and from December 2007 (see Exhibit 6).

As shown in Exhibit 7, Hawaii's unemployment rate in December was 3.2% after reaching a record low of 2.0% in December 2006. Hawaii continues to have one of the lowest unemployment rates in the nation, although the December figure was the highest since May 2004. Economists from UHERO project Hawaii's unemployment rate for 2008 will be 2.8%.

Softness in the tourism industry continues. In 2007, State of Hawaii total visitor arrivals were down 1.2% year-over-year. Domestic arrivals were flat year-over-year, but international arrivals were down 4.7% (see Exhibit 7). Forecasts by various local economists expect 2008 visitor arrivals to range from an increase of 0.3% to an increase of 1.6% (see Exhibit 8). Forecasts for 2008 domestic arrivals range from a decrease of 0.2% to an increase of 1.7%, while international arrivals are forecast to range from a decrease of 0.6% to growth of 1.2%. These forecasts were issued prior to the announcement of the loss of the "Pride of Aloha" cruise ship in the Hawaii market.

The outlook for the construction industry continues to be positive although slowing from recent record years. New residential construction is expected to continue to slow from

the peak of 2005-2006, although the overall industry will receive a boost from private non-residential construction and federal military housing initiatives. Construction also continues to be a major contributor to job growth in the state. Jobs in the construction sector grew by 4.8% year-over-year in the third quarter of 2007, although the growth rate was lower than previous quarters. Construction jobs are expected to peak in 2008 and then decline slightly in 2009. It should be noted that local economists caution that the slowdown in Hawaii's construction industry could be accelerated by further limitations to credit availability for commercial projects due to the impact of sub-prime loans on U.S. financial markets.

A summary of economic indicators for 2007 and projections for 2008-2009 by several local economists is shown in Exhibit 8. The table reflects the Department of Business, Economic Development, and Tourism ("DBEDT") and UHERO projections as of November and December 2007, respectively. The forecasts reflect a range of expectations for Hawaii's economy in 2008: growth in real personal income between 1.5% and 2.2%, non-farm job growth in the 1.0% to 1.6% range, total visitor arrivals between 0.3% and 1.6%, and inflation in the 3.8% to 4.0% range.

As mentioned earlier, economic conditions and expectations changed rapidly in early 2008 after this economic outlook was compiled. Subsequently, UHERO significantly lowered their outlook based on the U.S. economy entering recession and expectations of continuing economic woes. UHERO's *Annual Hawaii Forecast* was issued on March 21, 2008 and predicted lackluster performance for Hawaii's economy until 2010. As shown on the second page of Exhibit 8, the more pessimistic outlook permeates all facets of the local economy in 2008.

Risks to the local economic outlook are likely to originate from external economic conditions in the U.S. or Japan. The U.S. economy appears to have entered a recession. Further fallout from sub-prime lending, rising inflation, rapidly slowing economic growth and an unstable stock market are realistic threats that could further deepen or prolong the U.S. recession. Locally, increased inflation, declining visitor arrivals, and a rapid decline in construction are concerns. Tourism shocks in the form of terrorism, disease outbreaks, or natural disasters always remain possible. Present conditions indicate Hawaii is likely to see an economic slowdown in 2008; however, stable housing prices, less exposure in the sub-prime market, and the bargains available to foreign travelers and investors due to the weak U.S. dollar may help the Hawaii economy avoid a deep and prolonged downturn.

### **2007 Sales Performance**

Despite a relatively strong local economy, HECO experienced sluggish sales performance starting in the second half of 2005 and continuing into 2008 as 2007 sales declining by 0.3% below 2006 (see Exhibit 9). The first half of 2007 saw some improvement with year-to-date June 2007 recorded sales growing 0.8% or 27.9 GWh above the same period in 2006 (see Exhibit 10, page 1). Both the residential and commercial sectors saw higher sales in the first half of 2007. However, sales stagnated in the second half of 2007, to some extent due to rapidly rising electricity prices caused partially by a run up in oil prices. In the second half of 2007, recorded sales declined by 1.3% year-over-year (see Exhibit 10, page 2). Both residential and commercial sales fell during this period.

The anemic sales performance reflects lower than average humidity, a local economy entering a slower growth phase, and escalating electricity prices. Electricity prices were falling year-over-year in the 4<sup>th</sup> quarter of 2006 and the 1<sup>st</sup> quarter of 2007, but began to rise again with 2007 prices exceeding 2006 levels by August 2007. Electricity prices are likely to continue to have a dampening effect on sales as they continue to climb and set new records in 2008.

The growth in the number of residential customers slowed in the second half of 2006 into 2007, falling from an annual growth rate of 1.0% in 2006 to only 0.4% in 2007. In addition, residential use fell by 0.4%, resulting in 2007 residential sales remaining flat in comparison to 2006. Despite continued jobs growth, commercial sales fell below 2006 by 0.5% in 2007 (see Exhibit 9). Lower humidity may have contributed to the declines in both residential use and commercial sales, and high prices likely also affected both sectors.

As seen in Exhibit 11, year-to-date February 2008 sales performance remains disappointing. As shown on page 2 of Exhibit 11, excluding the extra leap year day in 2008 indicates sales actually deteriorated so far in 2008. The extra day in 2008 added approximately 1.7% in the first two months of 2008. Adjusted year-to-date sales are thus 1.2% below 2007. Both residential and commercial sales declined.

#### Residential (Schedules R and E)

Residential sales were flat in 2007 with no growth over 2006 (see Exhibit 9). As shown in Exhibit 12, an increase in the average number of customers was offset by a decrease in use per customer. The approximately 1,100 incremental increase in the average number of customers for 2007 was much lower than the 2,400 – 2,600 average per year experienced for the last five years (see Exhibit 13).

Residential use grew vigorously for several years starting in 1999, but suddenly tapered off at the end of 2004. Average residential use was lower every year since 2004. This decline may be a result of cooler less humid weather as compared to 2004 and the historical average, as well as rapidly rising electricity prices. Public awareness of higher prices not only in electricity but in all commodities continues and may also be dampening electricity use. Energy conservation messages and increasing “live green” awareness may also be contributing to lower residential use.

#### Commercial (Schedules G, J, H, P, and F)

Robust commercial sales growth in the beginning of the century began to stagnate in mid-2005. 2007 saw commercial sales falling by 0.5% or 25.3 GWh below 2006 (see Exhibit 9). Although local economic expansion moderated, strong job growth and low unemployment rates continued to support commercial sales. Offsetting the economic strength, less humid weather and awareness of high prices and energy conservation may have dampened commercial customers' electricity use, similar to the residential sector. While commercial customers have less flexibility in responding to higher electricity prices, many customers, particularly the military, have stated that energy conservation is a higher priority in order to stay within limited operating budgets.

Higher year-over-year electricity sales occurred in ten out of the sixteen business sectors analyzed for 2007. As shown in Exhibit 14, the housing, office and pumping sectors

saw growth, while the military alone offset almost all of the improvements in other sectors' sales resulting in only 0.2% billed commercial sales growth in 2007 over 2006. The housing sector benefitted from the opening of several high-rise residential condos in 2006 and 2007 in the Kakaako area. The office sector saw increases from a new medical office building in Kapahulu and expansion in the airport area, along with projects in the revitalized Waikiki Beach Walk area (several locations in this project are in the office sector because of mixed use classifications). Sales to the pumping sector increased in 2007 due to the completion of several upgrade projects at the Sand Island Wastewater Treatment Plant after several years of construction delays.

The large decrease in the military sector appears to be due to several reasons including deployments, housing renovations, building demolitions, and efforts to conserve energy (outside of demand-side management programs or "DSM"). Conservation measures were implemented by the military in response to high prices to make limited budget money available for other operational requirements in a time of rising utility costs. Sales to military housing could also be lower due to demolition and closing of housing for construction of new and renovated units. While the housing units are expected to be re-occupied in the future, the new units will likely be more energy efficient. Sales to the military continue to decrease year-over-year even though deployments have been underway for several years now. This indicates that the military is having some success in their efforts to decrease usage through efforts such as turning up thermostats and turning off lighting whenever possible.

#### Total Sales

Slowing economic growth and escalating electricity prices dampened electricity sales, and voluntary conservation efforts became more widespread. Weather in 2007, as measured by cooling degree days, was warmer than in 2006 as shown in Exhibit 15. On the other hand, wet bulb temperatures, a measure of humidity, were lower than average and 2006. After declining somewhat at the end of 2006, electricity prices shot up again in the latter part of 2007 partly as a result of high oil prices (see Exhibit 16).

In summary, sales were lower in 2007 as compared to 2006 reflecting less humid conditions and high electricity prices causing increased energy conservation efforts, offset by continued moderate growth in the local economy, warmer temperatures and the completion of several large construction projects.

### **2008 – 2012 Sales Update**

The economic outlook has changed dramatically since the May 2007 forecast was issued. Previous projections for slower but positive growth changed with the U.S. economy in a recession and Hawaii facing lower visitor arrivals and prospects of little economic growth the near-term. Oahu electricity sales were flat for two years going into 2007, but the positive economic outlook indicated a potential for sales growth in the near future. In September 2007, the May 2007 forecast was lowered to reflect the lower level of sales experienced year-to-date September 2007. The September 2007 update assumed the same positive growth rate for 2008 – 2012 sales as the May 2007 forecast but starting at a lower 2007 base. The expectation for positive growth in 2008 and 2009 seemed to be reasonable, however, sales continued to be less than stellar through the last quarter of 2007.



In the beginning of 2008, the economic outlook for the U.S. economy took a dramatic turn for the worse with the crash of the sub-prime mortgage market, the falling value of the dollar against foreign currencies, and skyrocketing energy prices. In the 1<sup>st</sup> quarter of 2008, many economists finally acknowledged that the U.S. had slipped into a recession at the end of 2007 and began issuing more pessimistic economic forecasts. The downturn in economic projections was the basis for a re-examination in March 2008 of HECO's sales projections for 2008 – 2012.

Locally, the visitor industry outlook was downgraded in early 2008 with the U.S. market no longer supporting stumbling international arrivals. In addition, after several years of strong growth, housing construction and re-sales slowed in 2006 and have not rebounded. While the Hawaii housing market does not appear to be as unstable as in the rest of the U.S., local developers have learned from previous downturns and are less willing to build new houses while existing inventory remains unsold. The May 2007 forecast, as well as the September 2007 update, was based on an outlook of slow, positive local economic growth with moderating prices, offset somewhat by slower residential customer growth and heightened awareness of energy conservation that dampened both residential and commercial electricity sales. The September 2007 projections now appear to be overly optimistic with the U.S. economy slipping into recession, oil prices continuing to set new record levels, and the possible impact tightening credit may have on construction projects.

The May 2007 sales forecast's 2008 projection was lowered by 42 GWh in the September 2007 sales update. This did not appear to have captured the full extent of the slowdown in electricity sales as February year-to-date 2008 recorded sales are already 1.7% below the September 2007 update (see Exhibit 17). Both residential and commercial sales are below forecast, by 3.4% and 0.9%, respectively. The growth in the number of residential customers continues to be lower than recent trends, while use per residential customer so far in 2008 has been 3% lower than the September 2007 update predicted. Commercial sales are also lower with customers apparently making greater efforts at energy conservation in response to high prices and environmental awareness.

The March 2008 sales update, shown in Exhibit 18, incorporates lower sales expectations for 2008 - 2012 based on year-to-date 2008 sales, and expectations for a local economy with little if any growth. Sales are expected to continue to decline or stay flat through 2009, with some growth returning in 2010. Sales are not expected to return to the record high level achieved in 2004 until after 2010. For 2008, sales are expected to remain at 2007 levels and decline by 0.2% in 2009 as high electricity prices persist and the economy sours. For 2010 – 2011 sales are expected to grow at moderate average annual rate of 0.8%, bolstered by completion of a few large retail and military projects. In 2012 sales, jump up with the introduction of a mass transit system. Both residential and commercial sales are expected to see annual rates of growth below 1% through 2010, with commercial sales showing slightly stronger growth. As compared to the September 2007 update, the March 2008 update is 61 GWh and 134 GWh lower in 2008 and 2009, respectively. The March 2008 update averages about 200 GWh lower each year thereafter.

For the short-term (2008), residential and commercial monthly time series models were developed. For the residential sector, the model was specified for residential use per customer with the forecast number of customers derived externally using a simple exponential smoothing model. For the commercial sector, the model was derived using total

commercial sales. Short-term models were specified using January 1997 – January 2008 monthly recorded sales data with 1996 – January 2008 DSM impacts added back to sales.

For the longer range (2009 – 2012), annual econometric models were developed and the annual growth rates from these models were used to project residential use per customer and commercial sales for the remainder of the forecast horizon using 2008 as the starting point. The models were specified using 1976 – 2007 annual billed sales data with 1996 – 2007 DSM impacts added back to sales.

The short-term equations incorporated independent variables for weather, cooling degree days (“CDD”) and wet bulb temperatures (“wet bulb”). The long-term equations found only CDD to be of significance in explaining sales. For forecast years, average weather was assumed (1977 – 2007 for CDD and 1997 – 2007 for wet bulb), either on an annual or monthly basis depending on the equation.

Several economic variables were examined for both the residential use and commercial sales equations. For the short-term equations, residential use was explained by residential electricity price (in 1992 dollars per kWh) and commercial included non-agricultural (“non-ag”) job count. Both equations included a growth trend variable. In the short-term monthly models, commercial sales did not appear to have a statistically significant relationship with real electricity prices.

For the long-term equations, the economic variables for real electricity prices and real personal income per capita for residential use and non-ag jobs for commercial sales were found to have the most explanatory power. The inclusion of an economic variable was deemed important over the long run as electricity sales appear to be driven by economic conditions. The inclusion of the economic variable also allows the growth in sales to be dependent on an explanatory variable rather than on a straight-line growth trend as in the short-term equations.

The short-term monthly commercial equation was also specified with non-ag jobs as an economic driver; however, for the residential equation a better statistical fit was found without an economic driver. The difference in approach between the residential use and commercial sales short-term models is reasonable because non-ag jobs data is available on a monthly basis while Honolulu real personal income data is only available annually and is usually delayed (up to a year).

#### Residential Sales

Residential sales are projected to decrease by 0.9% and 1.2% in 2008 and 2009, respectively, then grow an average 1.2% per year thereafter (see Exhibit 18). This rate of growth is lower than that experienced from 2000 – 2004, when record low interest rates, a local housing market boom, and the accessibility of affordable residential air conditioning units may have contributed to growth. The March 2008 update projects lower residential sales than the September 2007 sales update (see Exhibit 19) because of assumptions of higher electricity prices and slower customer growth rates. Residential sales growth in the March 2008 update expects growth in new residential customers to continue at a slower rate than experienced in the last five years, further dampened by declining residential use per customer. This is consistent with an environment where high prices erode consumer spending power and encourage conservation.

Residential use per customer is expected to decline through 2010. The main driver of this lower use is the assumed persistence of high electricity prices. Oil prices are expected to stabilize somewhat, but are not expected to weaken over the forecast horizon. Historically high consumer prices are likely to erode customers' disposable income and recession fears are likely to dampen spending. As shown in Exhibit 20, residential use per customer is projected to remain below the level of use experienced in 2003 – 2007 for the forecast horizon.

It should be noted, however, that although DSM program efforts have resulted in increased penetration of compact fluorescent bulbs and other energy saving appliances, residential customers do have appliances that created the higher levels of sales in previous years and continue to add new technology. Analysis of Hawaiian Electric's residential appliance saturation surveys indicated that air conditioning saturation climbed 17 percentage points, from 40% to 57% between 2000 and 2006. Saturation of air conditioning in the residential sector is expected to continue to grow in the forecast horizon, but at a slower pace. Flat screen televisions and other new consumer technologies continue to be popular and may replace existing appliances. This may have implications for the peak forecast that is not captured when examining declining sales.

The declining residential use per customer is somewhat offset by the projected annual average 0.4% growth in number of residential customers. The growth in the number of customers remained stable at about 1% per year for 2000 – 2006. Beginning in mid-2006, however, the year-over-year increase in number of residential customers began to slow. The slowdown in the residential housing market has affected the growth in residential customers and this trend is expected to continue, thus the projected residential customer growth is expected to be much lower than previous estimates and similar to the 2007 growth rate.

The projected change in residential sales is consistent with an environment of high prices, sluggish housing market, and poor economic conditions.

#### Commercial Sales (excluding Schedule F – Street Lighting)

In the commercial sector, the March 2008 sales update expects only limited growth in 2008 and 2009 after lower sales in 2007 (see Exhibit 18). Commercial sales are projected to increase by 0.4% and 0.1% in 2008 and 2009, respectively. Slightly stronger growth rates are expected in 2010 – 2011 with the completion of some large construction projects. In 2012, the relatively large commercial sales growth of 2.3% is due to the assumed installation of the first phase of the Honolulu mass transit project. The March 2008 update projects commercial sales to be lower than the September 2007 update for all years of the forecast, as shown in Exhibit 19, primarily due to sales trends seen through February 2008. The commercial sector has seen lower sales since 2004. While commercial customers appear to have less immediate response to electricity prices than residential customers, recent high prices apparently are impacting commercial customers' operations resulting in increased energy conservation efforts. The March 2008 update assumes that commercial customers continue to place increased emphasis on energy conservation. Several large commercial customers, including the U.S. Navy and the University of Hawaii, have indicated they have embarked on defined energy conservation programs.

The commercial forecast models' results were adjusted to include large major construction projects and customers' operational changes that are believed not to be captured in the historical sales data trends. A list of the large projects used to adjust the econometric model results is shown in Exhibit 21. This list does not include all of the projects investigated, but only those whose impacts were deemed not imbedded in the historical sales data used to develop the time series model. Offsetting some of this new growth are expected losses due to expanding popularity of non-DSM energy conservation measures.

The commercial sales forecast for 2008 – 2012 reflects the downturn in Oahu's economy, persistently high prices, as well as increased conservation, offset by the completion of large construction projects.

#### Street Lighting (Schedule F)

Street lighting electricity use is a very small part of Hawaiian Electric's total sales and tends to fluctuate up and down from year to year. Many street and traffic lights are not metered and are billed on a flat use basis. The flat use accounts are periodically evaluated and their usage adjusted retroactively. This adjustment tends to result in periodic swings in monthly sales. The underlying trend has been declining street lighting sales due to improvements in lighting technology that appears to offset any growth from additional residential developments. The March 2008 update expects street lighting sales to be flat throughout the forecast horizon.

#### Energy Efficiency Improvements

The City & County of Honolulu passed Bills 53 & 54 in late 2001 and the law became effective December 8, 2001. These ordinances mandate increased equipment and building shell energy efficiencies for residential and commercial buildings, consistent with the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 90.1 (1999). The impacts from these bills were estimated based on information obtained from DBEDT, and remain the same as those used in previous sales forecasts. The estimated incremental impacts over 2007 are incorporated into the forecast. The forecast also includes the estimated impact from the Hawaii Model Energy Code (HMEC) and naturally occurring energy efficiency trends, primarily in the commercial sector.

#### Net Energy Metering (NEM) and Interconnection Agreements

The March 2008 update includes the impact of net energy metering ("NEM") installations from projections compiled by the Energy Projects Division. The projections are based on assumptions that systems are less than 50 kW in capacity, there are no increases in the thresholds and Federal tax credits expire in 2008. Both residential and commercial NEM systems are included. The estimated impacts of large photovoltaic ("PV") projects are also included using information from interconnection agreements and inquiries from commercial customers.

#### Future DSM

Future DSM impacts included in this forecast are consistent with those filed in Hawaiian Electric's Annual Methods & Evaluation report dated November 2007 and the Energy Efficiency Docket No. 05-0069. Existing DSM programs are assumed to continue. Load management programs are excluded from the peak forecast.

### Total System Sales

The forecast of total Hawaiian Electric system sales is shown in Exhibit 18. In 2008, total sales are projected to be 7,676.6 GWh, flat with recorded 2007 sales. Sales are projected to decrease by 0.2% in 2009 to 7,657.8, and then finally see some growth at an annual average of 0.8% for 2010 – 2011. Higher growth of 2.3% is expected in 2012 with the first phase of the Honolulu mass transit system. This trend is consistent with the assumptions of short-term economic stagnation and unrelenting high prices.

After sizzling growth in the early part of the century, the outlook for the local economy took a turn for the worse as the sub-prime mortgage crisis spread, energy prices rose unchecked and the implosion of the housing market dragged the U.S. economy into a recession. Domestic visitor arrivals were the backbone of the Hawaii visitor industry in recent years as international arrivals weakened. With the waning U.S. economy and high travel costs, the domestic arrivals market is likely to soften. The housing market cooled after several years of torrid activity with a lower volume of sales, but appears to be more stable locally than on the mainland since prices have not yet shown rapid declines. Commercial projects will continue to maintain the construction industry to some degree, benefitting from military projects and bolstered by the Honolulu mass transit project in later years of the forecast horizon.

The March 2008 sales update is lower than the September 2007 update for the entire forecast horizon. As shown in Exhibit 19, the March 2008 update is 61 GWh lower in 2008 than the September 2007 update and 134 GWh lower in 2009. The forecast then ranges from 190 GWh to 208 GWh lower over 2010 – 2012. Lower residential customer growth and declining residential use due to high prices contribute to falling residential sales in the short-term. Commercial sales, although less sensitive to short-term prices, are also affected by high prices and expectations of little job growth. These trends are reasonable relative to the last three years of negative sales performance.

### **2008 – 2012 Peak Forecast**

The record system peak of 1327 gross MW was set on October 12, 2004. This peak has not been exceeded in the years since 2004 as sales have stagnated. The 2006 system peak of 1315 gross MW occurred on August 28, 2006 and was unusual because it was a day peak. The last time the system peak was a day peak was in 1996. The 2007 system peak was 5% lower than the 2004 peak at 1261 gross MW. The March 2008 update expects peaks to remain lower than the 2004 record peak until 2012, when excluding standby loads. As shown in Exhibit 22, the March 2008 peak update is lower than the May 2007 peak forecast (the September 2007 sales update did not update the peak forecast) for all years of the forecast horizon.

The March 2008 update peaks were derived using sales load factors from the May 2007 forecast. The peak projections for the May 2007 forecast were derived using the Hourly Electric Load Model (HELM) and weather normalized load profiles from the 2003 Hawaiian Electric Class Load Study. For the March 2008 peak update, large adjustments such as DSM, NEM and PV, self- and co-generator customers, and mass transit were backed out of the May 2007 forecast prior to deriving annual sales load factors. The adjusted sales load factors were then applied to the March 2008 sales update (again

excluding the previously mentioned adjustments) to develop updated peaks. These peaks were then adjusted for DSM, NEM and PV, self- and co-generator, and mass transit impacts.

Customers with large, pre-existing, self- and/or co-generators have the potential to place added demand on Hawaiian Electric's system when their co-generators are experiencing outages. Historical demand data was evaluated through December 2007 and total potential coincident demand from these customers was projected to be 25 MW.

The projected system peak is lower than the May 2007 forecast by 20 - 42 MW over the forecast horizon, as shown in Exhibit 22. The projected system peaks are lower than the May 2007 forecast due to lower sales projections. The gross and net MW peak and minimum load forecasts including adjustments for standby loads are shown in Exhibit 23.

### **Conclusion**

The March 2008 sales and peak update for 2008 - 2012 is shown in Exhibit 23. Compared to the September 2007 update, the total sales projected in the March 2008 update is lower by 0.8% to 2.5% over 2008 - 2012. Both residential and commercial sales are expected to be lower than September 2007 projections. Peaks are also projected to be lower due to the more pessimistic sales projections. For financial planning purposes, it is recommended that the company adopt the 2008 - 2012 total sales and peak forecast shown in Exhibit 23.

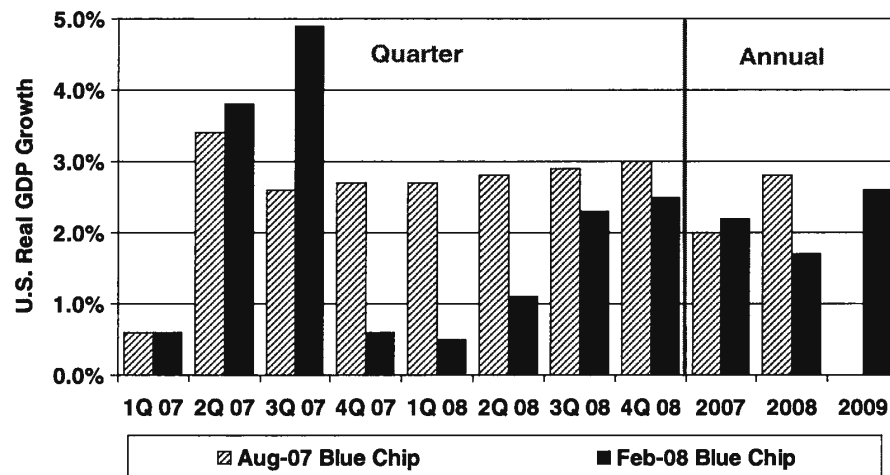
**EXHIBIT 1**

Hawaiian Electric Company, Inc.  
**MARCH 2008 SALES UPDATE**

	Recd <u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>Sales Forecast with Adjustments, No Future DSM</b>						
Residential	2,134.5	2,135.6	2,132.8	2,141.8	2,178.9	2,223.6
% incr		0.1%	-0.1%	0.4%	1.7%	2.1%
Commercial	5,503.4	5,540.3	5,577.2	5,658.0	5,726.3	5,889.8
% incr		0.7%	0.7%	1.4%	1.2%	2.9%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,713.5	7,747.5	7,837.3	7,942.7	8,151.0
% incr		0.5%	0.4%	1.2%	1.3%	2.6%
<b>Future DSM</b>						
Residential		-20.9	-44.4	-54.1	-57.2	-58.2
Commercial		-16.0	-45.3	-74.4	-103.3	-131.0
Sched F		0.0	0.0	0.0	0.0	0.0
Total		-36.9	-89.7	-128.5	-160.5	-189.2
% incr						
<b>Recommended Sales Forecast with Future DSM</b>						
Residential	2,134.5	2,114.7	2,088.4	2,087.7	2,121.7	2,165.4
% incr		-0.9%	-1.2%	0.0%	1.6%	2.1%
Commercial	5,503.4	5,524.3	5,531.9	5,583.6	5,623.0	5,758.8
% incr		0.4%	0.1%	0.9%	0.7%	2.4%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,676.6	7,657.8	7,708.8	7,782.2	7,961.8
% incr		0.0%	-0.2%	0.7%	1.0%	2.3%

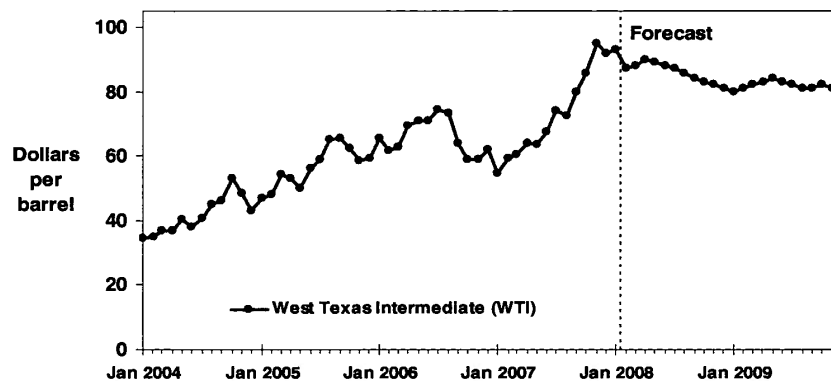
EXHIBIT 2

## U.S. Economic Growth Rapidly Slows



Source: Blue Chip Economic Indicators

## Crude Oil Prices to Average \$86.46/bbl in 2008



Short-Term Energy Outlook, February 2008





EXHIBIT 3

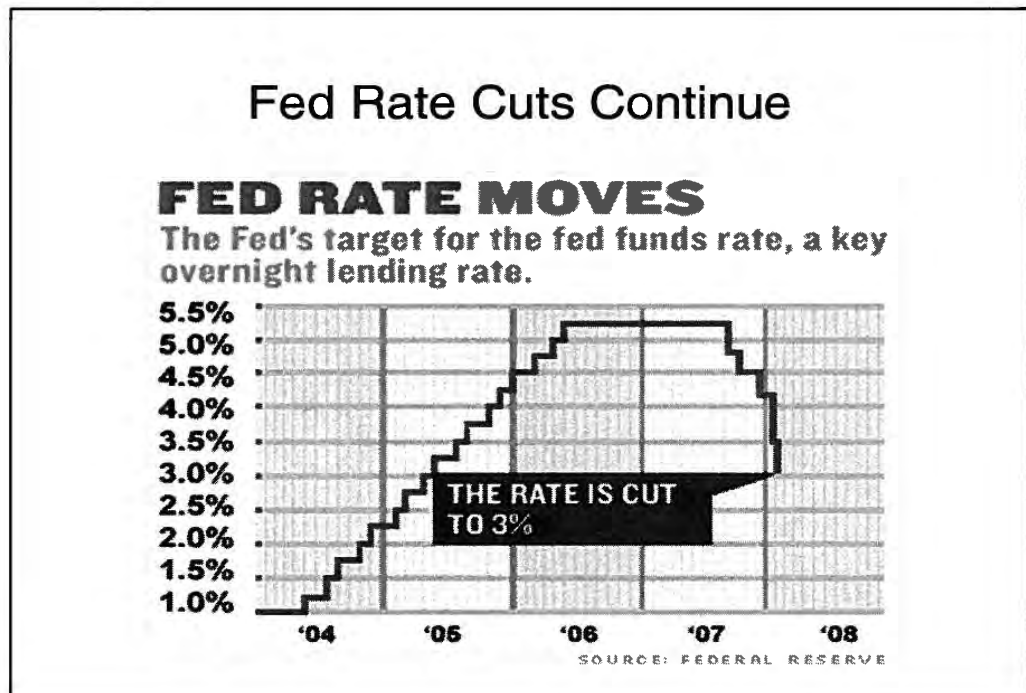
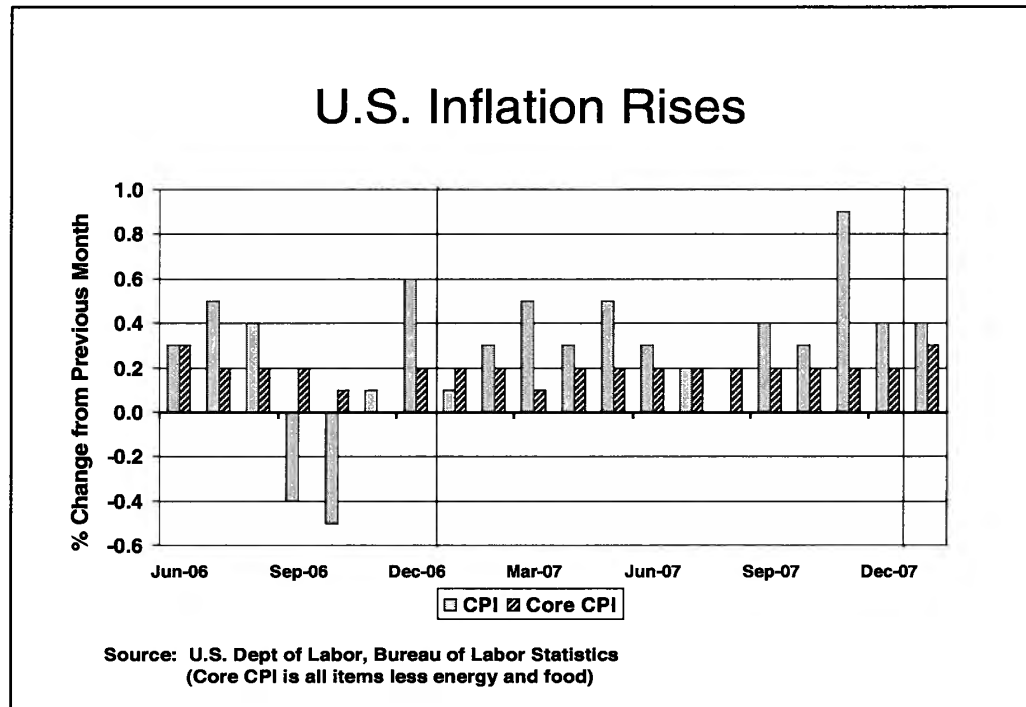
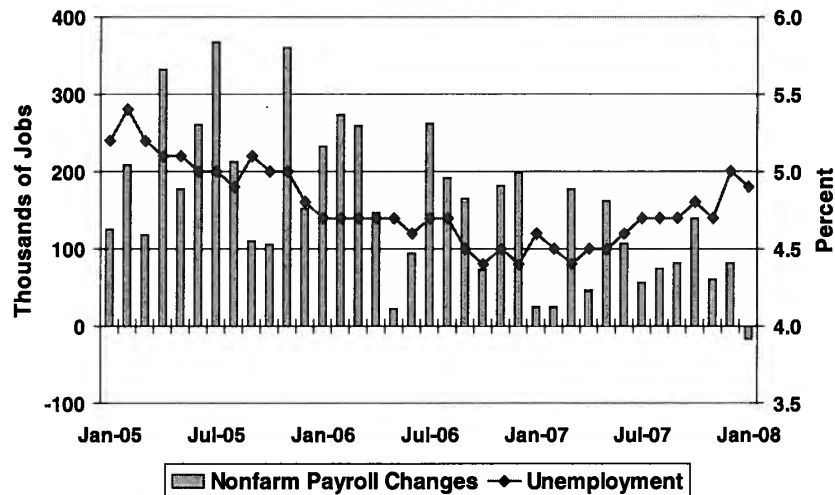


EXHIBIT 4

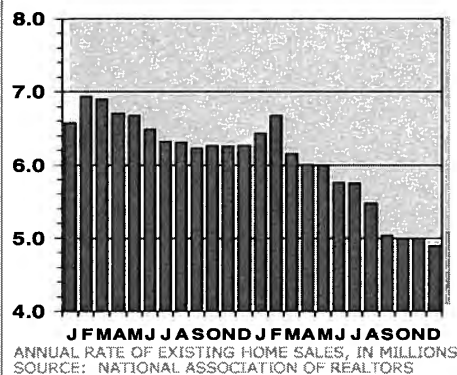
## U.S. Unemployment at 4.9%



Note: Seasonally adjusted

## U.S. Housing Slowdown Continues

### EXISTING HOME SALES DROP



### NEW HOME SALES DECLINE

Downward trend continues

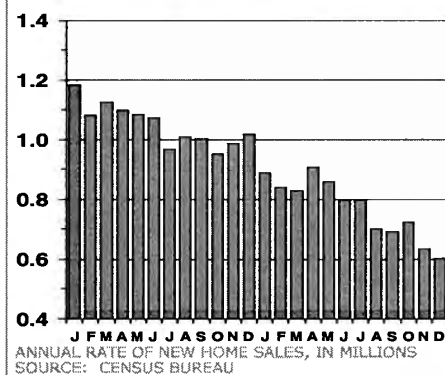
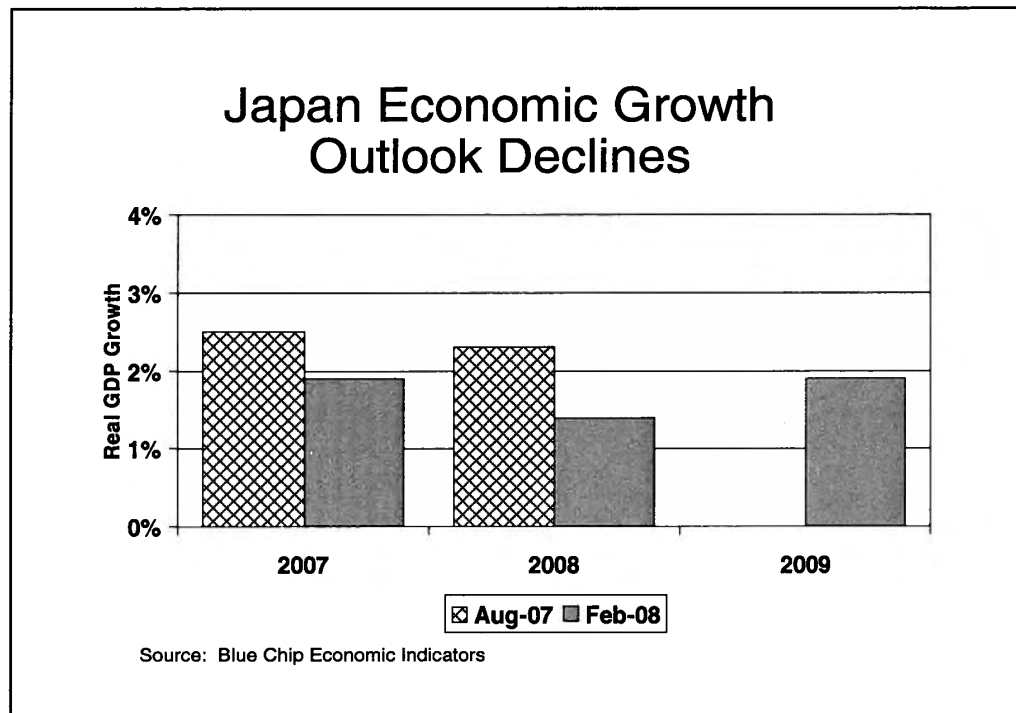


EXHIBIT 5



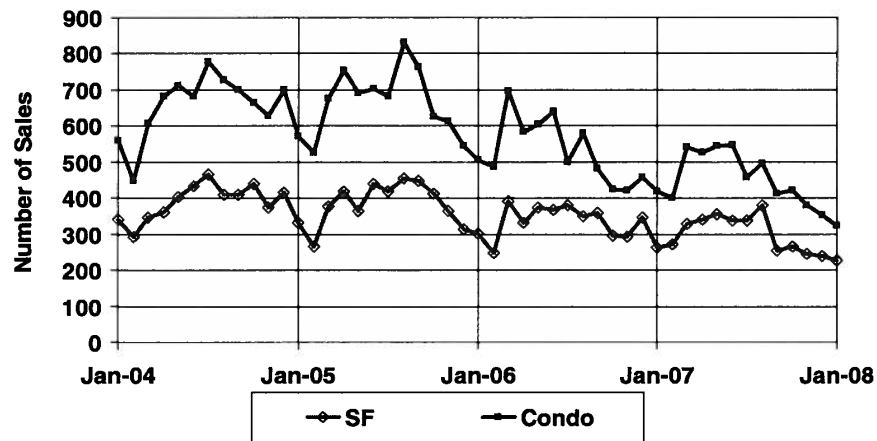
### Hawaii's Economy in 2008

Indicator	Jun 2007 Forecast Update	Dec 2007 Forecast Update	Difference (% points)
<b>Non-farm Jobs (% chg)</b>	<b>1.4</b>	<b>1.6</b>	<b>+ 0.2</b>
<b>Employment (% chg)</b>	<b>1.3</b>	<b>0.4</b>	<b>- 0.9</b>
<b>Unemployment (%)</b>	<b>2.6</b>	<b>2.8</b>	<b>+ 0.2</b>
<b>Real Personal Income (% chg)</b>	<b>2.0</b>	<b>1.9</b>	<b>- 0.1</b>
<b>Inflation Rate (%)</b>	<b>3.8</b>	<b>3.8</b>	<b>-</b>

Source: UHERO Quarterly Forecast Update

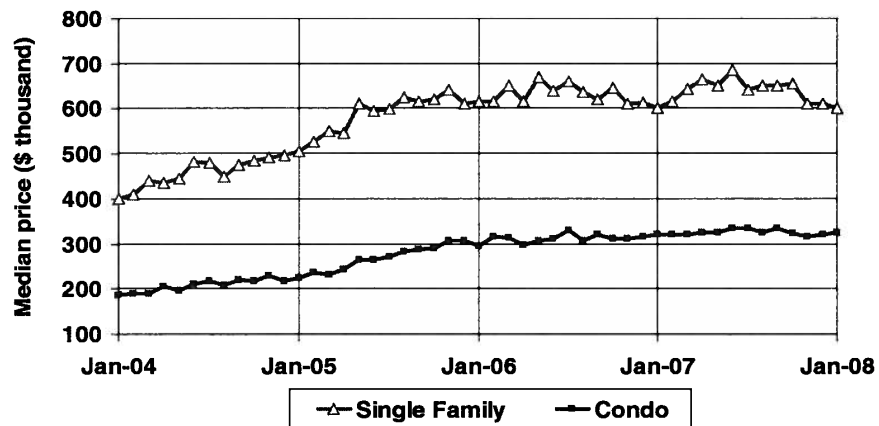
EXHIBIT 6

## Oahu Home Sales Volume Slows



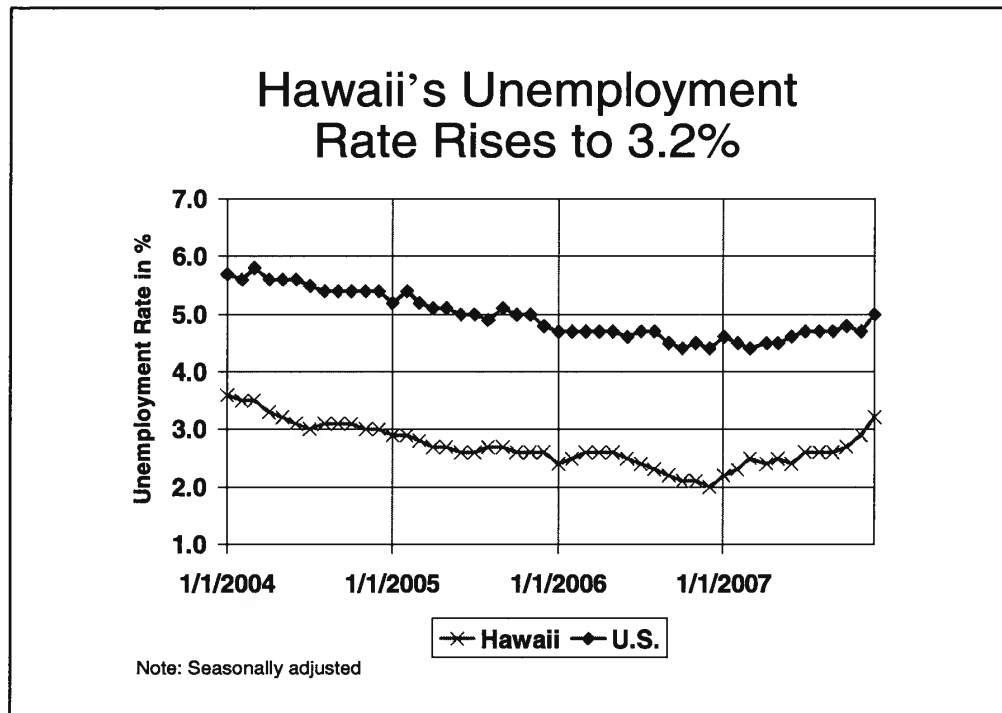
Source: Existing Home Resales, Honolulu Board of Realtors

## While Home Prices Stabilize



Source: Existing Home Resales, Honolulu Board of Realtors

EXHIBIT 7



## Visitor Arrivals Continue To Lag

	Dec 2007 Month	Dec 2007 YTD
<b>Visitor Arrivals</b>	2.7% ↓	1.2% ↓
<b>Domestic Arrivals</b>	3.4% ↓	--
<b>Int'l Arrivals</b>	0.9% ↓	4.7% ↓
<b>Total Expenditures</b>	3.2% ↑	0.9% ↑
<b>Visitor Days</b>	1.2% ↑	1.6% ↓

Note: Percentage change relative to 2006 for the same period  
Source: DBEDT

EXHIBIT 8  
Page 1 of 2

COMPARATIVE 2007-09 HAWAII ECONOMY FORECASTS  
ANNUAL PERCENTAGE CHANGE

	Jobs			Employment			Real Pers Income			CPI-U (Honolulu)		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Actual	1.9				0.7					4.8		
BOH <sup>1</sup>	1.9	1.3	0.9				1.8	2.2	2.1	4.6	3.8	2.8
UHRO <sup>2</sup>	2.1	1.6	1.2		0.4	0.9	1.6	1.9	2.2	5.0	3.8	3.1
Laney <sup>3</sup>	2.0	1.0					1.0	1.5		5.0	4.0	
DBEDT <sup>4</sup>	1.9	1.5	1.3				1.8	1.8	1.9	4.5	3.8	3.4

	Construction <sup>5</sup>			Total Visitor Arrivals			Domestic Arrivals <sup>6</sup>			International Arrivals <sup>7</sup>		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Actual				-1.2			0.0			-4.7		
BOH <sup>1</sup>	-1.2	-6.0	-3.2	-1.6	1.6	2.1	-0.1	1.7	2.2	-5.3	1.2	1.8
UHRO <sup>2</sup>	5.3	-0.7	-4.2	-1.1	0.3	1.1	-0.8	-0.2	0.8	-3.4	-0.6	0.9
Laney <sup>3</sup>				-0.5	1.5							
DBEDT <sup>4</sup>				-0.8	1.0	1.5						

- <sup>1</sup> Paul Brewbaker, Chief Economist (Bank of Hawaii), January 30, 2008, <https://www.boh.com/econ/reports/econ013008.pdf>  
<sup>2</sup> Professors Carl Bonham and Byron Gangnes (University of Hawaii Economic Research Organization), December 11, 2007  
<sup>3</sup> Professor Leroy Laney (HPU) FHB Economic Forecast 2007-2008 Edition, <http://www.fhb.com/pdf/EconForecastHawaii07.pdf>, November 7, 2007  
<sup>4</sup> Hawaii DBEDT Quarterly Statistical & Economic Report, 4th Quarter 2007, November 16, 2007  
<sup>5</sup> GE Contracting tax base, UHRO Construction Forecast, September 5, 2007  
<sup>6</sup> UHRO projections for U.S. arrivals  
<sup>7</sup> UHRO projections for Japan arrivals  
Note: Actuals are preliminary

**EXHIBIT 8**  
**Page 2 of 2**

## March 2008 UHERO Annual Forecast Lowers Outlook For 2008

Indicator	Dec 2007 Forecast Update	Mar 2008 Forecast	Difference (% points)
<b>Non-farm Jobs (% chg)</b>	<b>1.4</b>	<b>0.1</b>	<b>-1.3</b>
<b>Employment (% chg)</b>	<b>0.4</b>	<b>-0.4</b>	<b>-0.8</b>
<b>Unemployment (%)</b>	<b>2.8</b>	<b>3.5</b>	<b>+0.7</b>
<b>Real Personal Income (% chg)</b>	<b>1.9</b>	<b>0.3</b>	<b>-1.6</b>
<b>Inflation Rate (%)</b>	<b>3.8</b>	<b>4.3</b>	<b>+0.5</b>

Source: UHERO Quarterly Forecast Update and Annual Hawaii Forecast

**EXHIBIT 9**

**Hawaiian Electric Company, Inc.**

**COMPARISON OF 2007 VS. 2006  
Recorded GWh Sales**

<u>Schedule</u>	<u>2007</u>	<u>2006</u>	<u>Diff</u>	<u>% Diff</u>
R	2,134.5	2,134.4	0.1	0.0%
G	377.2	367.5	9.7	2.6%
J	2,054.7	2,039.4	15.3	0.8%
H	43.4	46.9	-3.5	-7.5%
P	3,028.0	3,074.8	-46.8	-1.5%
F	37.5	37.5	0.0	0.0%
Total	7,675.3	7,700.5	-25.2	-0.3%
Comml *	5,540.8	5,566.1	-25.3	-0.5%

<sup>1</sup> Includes Schedule F



EXHIBIT 10  
Page 1 of 2

**Hawaiian Electric Company, Inc.**

**COMPARISON OF 2007 VS. 2006  
FIRST HALF  
Recorded GWh Sales**

Schedule	1st Half 2007	1st Half 2006	Diff	% Diff
R	1,030.3	1,021.7	8.6	0.8%
G	182.7	175.5	7.2	4.1%
J	990.6	971.4	19.2	2.0%
H	21.8	22.9	-1.1	-4.8%
P	1,467.8	1,474.0	-6.2	-0.4%
F	18.8	18.6	0.2	1.1%
Total	3,712.0	3,684.1	27.9	0.8%
Commercial <sup>1</sup>	2,681.7	2,662.4	19.3	0.7%

<sup>1</sup> Includes Schedule F

**EXHIBIT 10**  
**Page 2 of 2**

**Hawaiian Electric Company, Inc.**

**COMPARISON OF 2007 VS. 2006**  
**SECOND HALF**  
**Recorded GWh Sales**

<u>Schedule</u>	<u>2nd Half 2007</u>	<u>2nd Half 2006</u>	<u>Diff</u>	<u>% Diff</u>
R	1,104.2	1,112.7	-8.5	-0.8%
G	194.5	192.0	2.5	1.3%
J	1,064.1	1,068.0	-3.9	-0.4%
H	21.6	24.0	-2.4	-10.0%
P	1,560.2	1,600.8	-40.6	-2.5%
F	18.7	18.9	-0.2	-1.1%
Total	3,963.3	4,016.4	-53.1	-1.3%
Commercial <sup>1</sup>	2,859.1	2,903.7	-44.6	-1.5%

<sup>1</sup> Includes Schedule F

**EXHIBIT 11**  
**Page 1 of 2**

**Hawaiian Electric Company, Inc.**

**COMPARISON OF 2008 VS. 2007  
FEBRUARY YEAR-TO-DATE  
Recorded GWh Sales**

<u>Schedule</u>	<u>Feb YTD 2008</u>	<u>Feb YTD 2007</u>	<u>Diff</u>	<u>% Diff</u>
R	333.8	331.1	2.7	0.8%
G	57.0	56.5	0.5	0.9%
J	313.7	307.6	6.1	2.0%
H	6.0	6.9	-0.9	-13.0%
P	468.8	471.4	-2.6	-0.6%
F	6.4	6.2	0.2	3.2%
Total	1,185.7	1,179.7	6.0	0.5%
Commercial <sup>1</sup>	851.9	848.6	3.3	0.4%

<sup>1</sup> Includes Schedule F

Note: 2008 was a leap year with an extra day of sales.

EXHIBIT 11  
Page 2 of 2

**Hawaiian Electric Company, Inc.**

**LEAP YEAR DAY ADJUSTED YEAR-OVER-YEAR COMPARISON**  
**February YTD 2008 vs. 2007**  
**Recorded GWh Sales**

Schedule	Feb YTD 2008	Less Leap Year Day	Adjusted Feb YTD 08	Feb YTD 2007	Adjusted Diff	Adjusted % Diff
R	333.8	-5.4	328.4	331.1	-2.7	-0.8%
G	57.0	-1.0	56.0	56.5	-0.5	-0.9%
J	313.7	-5.4	308.3	307.6	0.7	0.2%
H	6.0	-0.1	5.9	6.9	-1.0	-14.5%
P	468.8	-7.9	460.9	471.4	-10.5	-2.2%
F	6.4	-0.1	6.3	6.2	0.1	1.6%
Total	1,185.7	-19.9	1,165.8	1,179.7	-13.9	-1.2%
Commercial <sup>1</sup>	851.9	-14.5	837.4	848.6	-11.2	-1.3%

<sup>1</sup> Includes Schedule F

Note: 2008 was a leap year with an extra day of sales. This analysis assumes recorded sales for February 2008 are spread equally over the days. Thus 1/29 x Feb 2008 recorded sales is the estimated impact of the additional day (approximately 1.7% for January and February).

EXHIBIT 12

**Hawaiian Electric Company, Inc.**

**RESIDENTIAL RECORDED SALES  
2007 VS. 2006**

	Dec YTD 2007	Dec YTD 2006	Difference	
			Amt	%
Recorded MWh Sales	2,134,535.2	2,134,431.8	103	0.0%
Bills	3,118,314	3,105,515	12,799	0.4%
kWh Use per Bill	685	687	-3	-0.4%

Change in Customers x Use per Bill = Difference in Sales					
12,799	x	685	=	8,761	MWh

Change in Use Per Bill x Customers = Difference in Sales					
-2.788	x	3,105,515	=	-8,658	MWh

Total:	103	MWh
--------	-----	-----

EXHIBIT 13

## Residential Customer Additions Anemic

Average Customer Additions	2002	2003	2004	2005	2006	2007	2008 YTD
	2,540	2,483	2,422	2,599	2,524	1,067	1,111

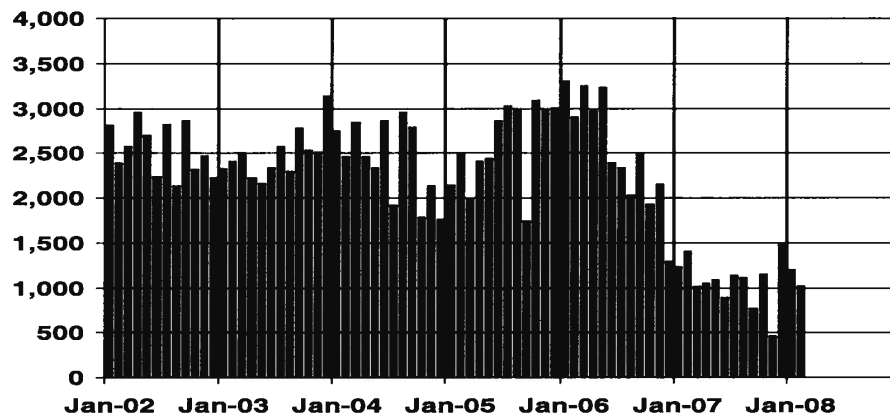


EXHIBIT 14

Hawaiian Electric Company, Inc.

**BILLED GWHS BY BUILDING TYPE  
YTD DECEMBER**

<i><b>Building Type</b></i>	<i><b>2007</b></i>	<i><b>2006</b></i>	<i><b>Diff</b></i>	<i><b>% Chg</b></i>
Offices	820.1	809.8	10.3	1.3%
Restaurant	256.6	248.8	7.8	3.1%
Retail (Non Food)	483.0	479.5	3.5	0.7%
Grocery (Retail - Food)	206.4	206.2	0.2	0.1%
Warehouse	125.4	126.2	-0.8	-0.6%
Education	402.4	403.1	-0.7	-0.2%
Health	230.7	227.8	2.9	1.3%
Lodging (Hotels)	400.2	403.5	-3.3	-0.8%
Housing (Apt/Condo)	450.3	438.0	12.3	2.8%
Service/Amusement	381.5	376.0	5.5	1.5%
Air Facilities	121.6	120.0	1.6	1.3%
Manufacturing	124.6	126.9	-2.3	-1.8%
Pumping (incl BWS)	210.2	200.4	9.8	4.9%
Military/Base	1,167.2	1,205.0	-37.8	-3.1%
Food Processing	67.6	68.2	-0.6	-0.9%
Others	74.1	71.5	2.6	3.6%
<b>Grand Total</b>	<b>5,521.9</b>	<b>5,510.9</b>	<b>11.0</b>	<b>0.2%</b>

EXHIBIT 15

Hawaiian Electric Co., Inc.

HISTORICAL WEATHER MEASURES

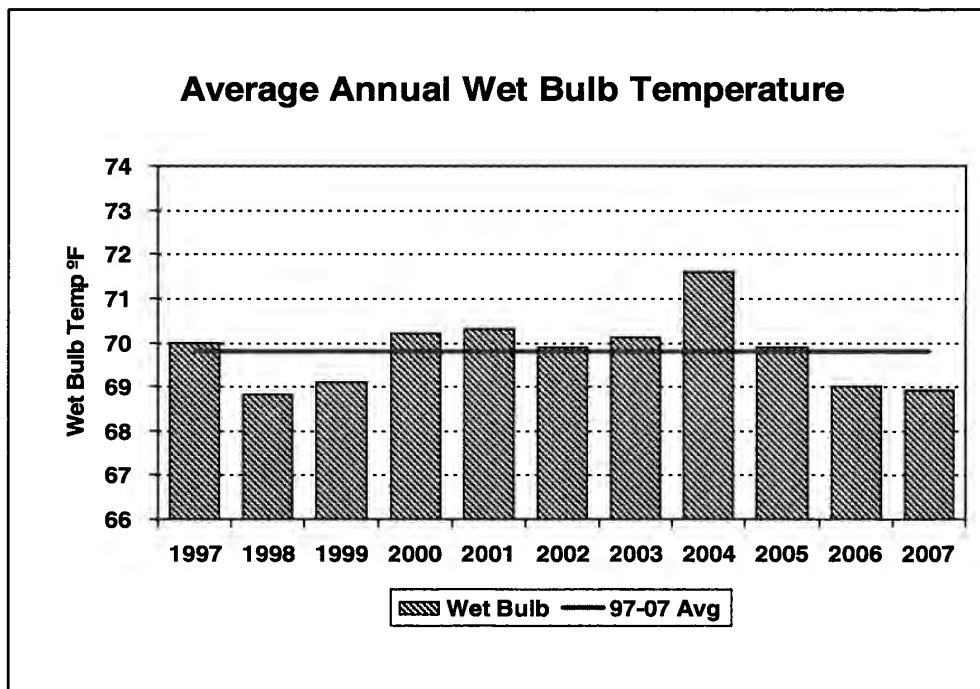
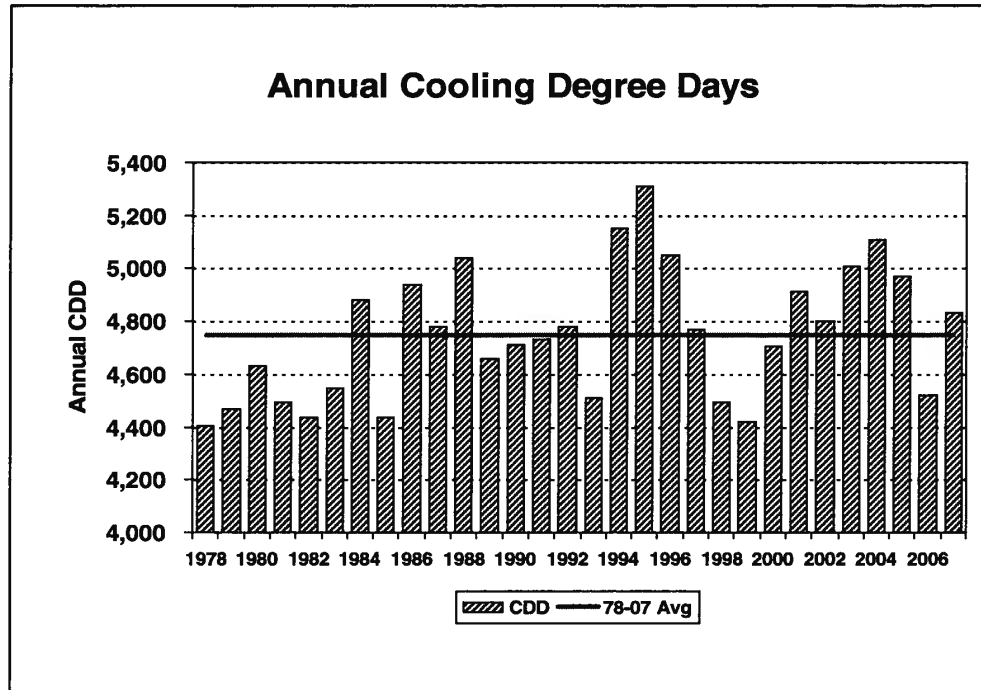




EXHIBIT 16

Hawaiian Electric Co., Inc.

HISTORICAL ELECTRICITY PRICES

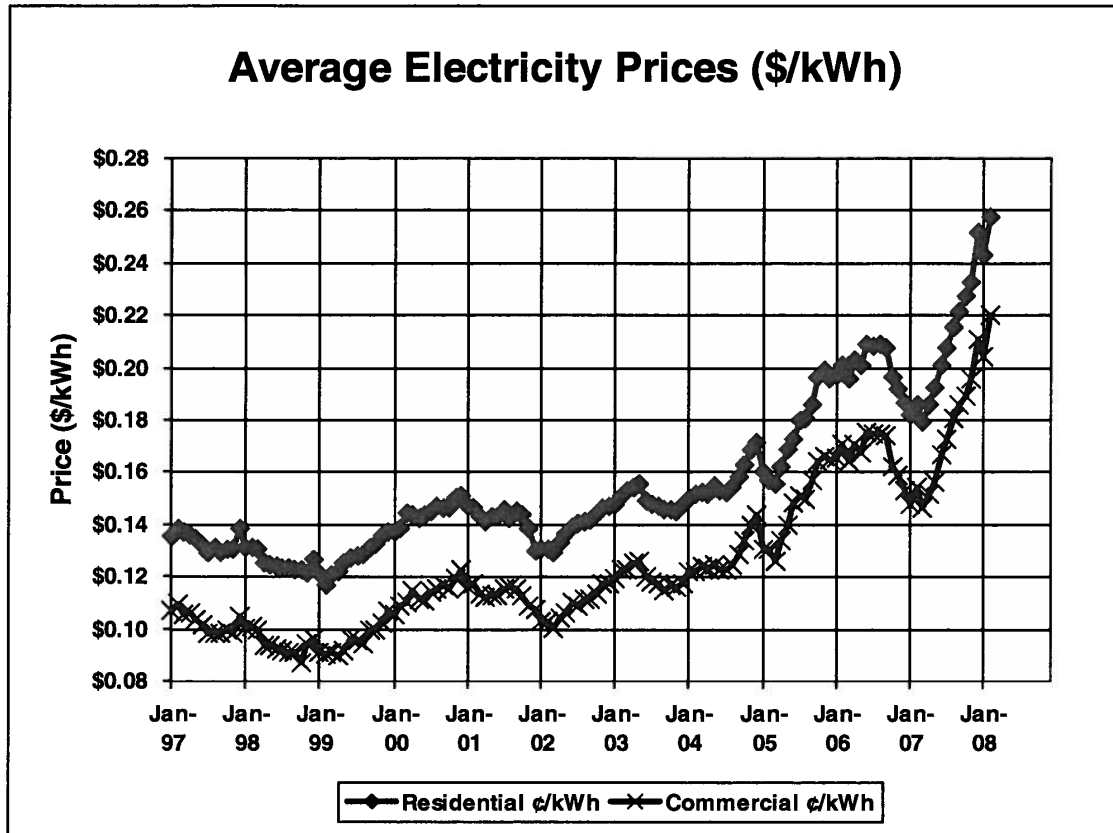


EXHIBIT 17

**Hawaiian Electric Company, Inc.**

**COMPARISON OF RECORDED VS. SEPTEMBER 2007 UPDATE  
FEBRUARY YEAR-TO-DATE 2008  
Recorded GWh Sales**

<u>Schedule</u>	<u>Feb YTD 08 Recorded</u>	<u>Feb YTD 08 Sep 2007 Upd</u>	<u>Diff</u>	<u>% Diff</u>
R	333.8	345.6	-11.8	-3.4%
G	57.0	56.9	0.1	0.2%
J	313.7	316.9	-3.2	-1.0%
H	6.0	6.1	-0.1	-1.6%
P	468.8	473.7	-4.9	-1.0%
F	6.4	6.4	0.0	0.0%
Total	1,185.7	1,205.6	-19.9	-1.7%
Commercial <sup>1</sup>	851.9	860.0	-8.1	-0.9%

<sup>1</sup> Includes Schedule F

**EXHIBIT 18**

**Hawaiian Electric Company, Inc.  
MARCH 2008 SALES UPDATE**

	<u>Recd</u> <u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>Sales Forecast with Adjustments, No Future DSM</b>						
Residential	2,134.5	2,135.6	2,132.8	2,141.8	2,178.9	2,223.6
% incr		0.1%	-0.1%	0.4%	1.7%	2.1%
Commercial	5,503.4	5,540.3	5,577.2	5,658.0	5,726.3	5,889.8
% incr		0.7%	0.7%	1.4%	1.2%	2.9%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,713.5	7,747.5	7,837.3	7,942.7	8,151.0
% incr		0.5%	0.4%	1.2%	1.3%	2.6%
<b>Future DSM</b>						
Residential		-20.9	-44.4	-54.1	-57.2	-58.2
Commercial		-16.0	-45.3	-74.4	-103.3	-131.0
Sched F		0.0	0.0	0.0	0.0	0.0
Total		-36.9	-89.7	-128.5	-160.5	-189.2
% incr						
<b>Recommended Sales Forecast with Future DSM</b>						
Residential	2,134.5	2,114.7	2,088.4	2,087.7	2,121.7	2,165.4
% incr		-0.9%	-1.2%	0.0%	1.6%	2.1%
Commercial	5,503.4	5,524.3	5,531.9	5,583.6	5,623.0	5,758.8
% incr		0.4%	0.1%	0.9%	0.7%	2.4%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,676.6	7,657.8	7,708.8	7,782.2	7,961.8
% incr		0.0%	-0.2%	0.7%	1.0%	2.3%

**EXHIBIT 19**

Hawaiian Electric Company, Inc.  
**Comparison of March 2008 Sales Update vs. September 2007 Sales Update**

	<u>Recd 2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>March 2008 Sales Update (Reduced by Future DSM)</b>						
Residential	2,134.5	2,114.7	2,088.4	2,087.7	2,121.7	2,165.4
% incr		-0.9%	-1.2%	0.0%	1.6%	2.1%
Commercial	5,503.4	5,524.3	5,531.9	5,583.6	5,623.0	5,758.8
% incr		0.4%	0.1%	0.9%	0.7%	2.4%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,676.6	7,657.8	7,708.8	7,782.2	7,961.8
% incr		0.0%	-0.2%	0.7%	1.0%	2.3%
<b>September 2007 Sales Update (Reduced by Future DSM)</b>						
Residential		2,172.0	2,174.8	2,188.5	2,213.5	2,251.4
% incr			0.1%	0.6%	1.1%	1.7%
Commercial		5,528.0	5,579.7	5,673.2	5,732.4	5,880.4
% incr			0.9%	1.7%	1.0%	2.6%
Sched F		37.6	37.5	37.5	37.5	37.6
% incr			-0.3%	0.0%	0.0%	0.3%
Total		7,737.6	7,792.0	7,899.2	7,983.4	8,169.4
% incr			0.7%	1.4%	1.1%	2.3%
<b>Mar 2008 less Sep 2007 Difference</b>						
Residential		-57.3	-86.4	-100.8	-91.8	-86.0
Commercial		-3.7	-47.8	-89.6	-109.4	-121.6
Sched F		0.0	0.0	0.0	0.0	0.0
Total		-61.0	-134.2	-190.4	-201.2	-207.6
% Difference		-0.8%	-1.7%	-2.4%	-2.5%	-2.5%

Note: Includes leap year impacts.

EXHIBIT 20

**Hawaiian Electric Company, Inc.**

**RESIDENTIAL SALES  
March 2008 Update**

Avg. No. of Cust.			Avg. Use per Cust.		Recorded Sales *	
Customers	% Chg		kWh	% Chg	GWh	% Chg
1996	236,849		7,868		1,863.4	
1997	238,269	0.6%	7,773	-1.2%	1,852.2	-0.6%
1998	239,487	0.5%	7,603	-2.2%	1,820.8	-1.7%
1999	241,167	0.7%	7,654	0.7%	1,846.0	1.4%
2000	243,511	1.0%	7,793	1.8%	1,897.7	2.8%
2001	246,226	1.1%	7,816	0.3%	1,924.4	1.4%
2002	248,765	1.0%	8,050	3.0%	2,002.7	4.1%
2003	251,248	1.0%	8,225	2.2%	2,066.5	3.2%
2004	253,670	1.0%	8,481	3.1%	2,151.3	4.1%
2005	256,269	1.0%	8,360	-1.4%	2,142.5	-0.4%
2006	258,793	1.0%	8,248	-1.4%	2,134.4	-0.4%
2007	259,860	0.4%	8,214	-0.4%	2,134.5	0.0%
2008	260,881	0.4%	8,106	-1.3%	2,114.7	-0.9%
2009	261,899	0.4%	7,974	-1.6%	2,088.4	-1.2%
2010	263,316	0.5%	7,928	-0.6%	2,087.7	0.0%
2011	265,034	0.7%	8,005	1.0%	2,121.7	1.6%
2012	266,751	0.6%	8,118	1.4%	2,165.4	2.1%

\* Includes future DSM, net energy metering, leap year impacts,

EXHIBIT 21

**Hawaiian Electric Company, Inc.**  
**Large Project GWh Sales For Econometric Models, March 2008 Update**

<u>Sector</u>	<u>Date</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Office	Oct-09			1.2	3.0	4.6	4.6
Office	Jan-11					2.2	4.4
Restrnt	Apr-10				2.4	4.8	4.8
Restrnt	Apr-10				2.0	6.3	6.3
Retail	Mar-08		3.4	4.1	4.1	4.1	4.1
Retail	Apr-09			4.8	8.2	8.2	8.2
Retail	Apr-09			3.8	6.1	6.1	6.1
Retail	Jan-10				1.4	2.3	3.7
Retail	Apr-10				5.2	10.4	10.4
Retail	Apr-10				1.9	6.1	6.1
Grocery	Oct-07		3.0	3.0	3.0	3.0	3.0
Grocery	Apr-09			1.9	2.6	2.6	2.6
Grocery	Jan-10				3.8	3.8	3.8
Grocery	Jan-11					2.5	2.5
Grocery	Jan-11					2.8	2.8
Educ			(6.2)	(15.6)	(29.7)	(42.9)	(54.2)
Educ	Sep-09			1.7	5.2	5.2	5.2
Educ	Jan-11						6.6
Health	Jul-08		1.1	2.3	4.5	4.5	4.5
Health	Jul-10				0.7	1.5	2.2
Hotel	Jan-07		(5.4)	(6.0)	(5.1)		
Hotel	Jul-09			6.6	13.2	13.2	13.2
Hotel	Jul-11					6.4	19.2
Svc/Amu	Jul-10				1.4	2.7	2.7
Air Fac	Jan-09			1.1	1.1	1.1	1.1
Manufg	Jul-09				1.1	1.2	1.2
Manufg	Sep-09			(3.5)	(7.0)	(7.0)	(7.0)
Pump	Oct-04		(4.8)	(10.4)	(10.4)	(10.4)	(10.4)
Military			1.1	5.4	9.6	22.8	24.2
Military				0.6	2.8	4.8	4.8
Military			(2.4)				
Military			6.3	23.8	45.9	49.0	62.0
Military			0.0	9.2	36.8	37.9	47.2
Military			(1.0)	(4.1)	(8.5)	(9.2)	(9.6)
Military				2.4	3.6	4.5	4.6
Mass Transit	Jan-12						67.7
Energy Conservation			(46.0)	(50.0)	(50.0)	(50.0)	(50.0)
3rd Party CHP				(2.0)	(4.0)	(4.0)	(4.0)
Plug-in Elec Vehicles						0.2	0.6
Total			(50.9)	(19.7)	54.9	101.3	205.2
Incremental YOY Change			(50.9)	31.2	74.6	46.4	103.9

EXHIBIT 22

**Hawaiian Electric Company, Inc.  
Comparison of March 2008 Peak Update  
vs. May 2007 Peak Forecasts  
(Gross MW)**

	<u>2007 *</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>March 2008 Peak Update <sup>1</sup></b>						
System Peak	1,286	1,315	1,315	1,324	1,339	1,371
% incr		2.2%	0.0%	0.7%	1.1%	2.4%
<b>May 2007 Peak Forecast <sup>2</sup></b>						
System Peak	1,331	1,335	1,346	1,363	1,377	1,413
% incr		0.3%	0.9%	1.3%	1.0%	2.6%
<b>March 2008 less May 2007 Difference</b>						
Gross MW		-20	-31	-39	-38	-42

\* 2007 adjusted actual = 1,261 MW, plus 25 MW net standby adjustment for 2007.

<sup>1</sup> March 2008 forecast peaks include 25 MW standby adjustments.

<sup>2</sup> May 2007 forecast peaks include 26 MW standby adjustments.

EXHIBIT 23  
Page 1 of 2

Hawaiian Electric Company, Inc.

2008 - 2012 EVENING PEAK, DAY PEAK, MINIMUM LOAD DEMAND,  
SALES LOAD FACTOR, AND SALES UPDATE

March 17, 2008

	GROSS MW										GWH SALES										
	Evening Peak					Day Peak					Minimum Load Demand										
	Gross Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Gross Peak Demand w/ DSM	% Chg	Sales Load Factor w/ DSM	Gross Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Gross Peak Demand w/ DSM	% Chg	Gross Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Gross Demand w/ DSM	% Chg	Recorded Sales w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Recorded Sales w/ DSM	% Chg
Actual																					
1990	1119	-3	1199	1202	0.8%	66.0%	1093				3.6%	468					6470.6				3.5%
1991	1141	-7	1220	1227	1.8%	65.4%	1101	-7	1213	0.3%	0.7%	470	0	0	0	0	6539.0	-28.4	7040.3	-0.7%	1.1%
1992	1173	-12	1175	1187	-3.7%	67.4%	1173	-11	1162	-4.2%	3.8%	477	0	0	0	0	6650.4	-51.0	6938.3	-1.4%	1.7%
1993	1174	-16	1161	1177	-1.2%	68.8%	1169	-15	1154	-0.7%	0.2%	473	0	0	0	0	6607.4	-70.4	6997.9	0.9%	-0.6%
1994	1193	-20	1203	1233	3.6%	68.2%	1210	-19	1191	3.2%	1.7%	482	0	0	0	0	6797.4	-91.5	7211.8	3.1%	2.9%
1995	1190	-24	1233	1257	2.5%	67.4%	1234	-23	1210	1.6%	-0.7%	487	0	0	0	0	6962.8	-109.6	7276.7	0.9%	2.4%
1996 *	1202	-3	1199	1202	0.8%	67.3%	1210	-1	1209	4.6%		495	0	0	0	0	7094.7	-3.6	7091.1	1.8%	1.8%
1997	1227	-7	1220	1227	1.8%	65.9%	1220	-7	1213	0.3%	0.7%	503	0	0	0	0	7068.7	-28.4	7040.3	-0.7%	1.1%
1998	1187	-12	1175	1187	-3.7%	67.4%	1173	-11	1162	-4.2%	3.8%	507	0	0	0	0	6989.3	-51.0	6938.3	-1.4%	1.7%
1999	1177	-16	1161	1177	-1.2%	68.8%	1169	-15	1154	-0.7%	0.2%	523	0	0	0	0	7068.3	-70.4	6997.9	0.9%	-0.6%
2000	1223	-20	1203	1233	3.6%	68.2%	1210	-19	1191	3.2%	1.7%	517	0	0	0	0	7303.3	-91.5	7211.8	3.1%	2.9%
2001	1257	-24	1233	1257	2.5%	67.4%	1234	-23	1210	1.6%	-0.7%	542	0	0	0	0	7386.3	-109.6	7276.7	0.9%	2.4%
2002	1278	-28	1250	1284	1.4%	67.5%	1254	-27	1227	1.4%		523	0	0	0	0	7511.5	-121.1	7390.4	1.6%	1.8%
2003	1316	-32	1284	1327	2.7%	66.9%	1287	-31	1256	2.4%		534	0	0	0	0	7657.3	-135.1	7522.2	1.8%	1.1%
2004	1363	-36	1327	1363	3.3%	66.3%	1316	-35	1281	2.0%		560	0	0	0	0	7882.1	-149.3	7732.8	2.8%	1.7%
2005	1313	-40	1273	1303	-4.1%	69.2%	1303	-40	1263	-1.4%		553	0	0	0	0	7886.3	-165.0	7721.3	-0.1%	-0.3%
2006 *	1347	-45	1302	1347	2.3%	67.5%	1360	-45	1315	4.1%		573	0	0	0	0	7892.1	-191.5	7700.6	-0.3%	2.3%
2007	1319	-58	1261	1319	-3.1%	69.5%	1310	-57	1253	-4.7%		560	0	0	0	0	7924.8	-249.4	7675.4	-0.3%	2.3%
Forecast																					

Forecast evening peaks are not reduced for interruptible loads (4 MW), but do include standby loads (25 MW).  
Forecast day peaks are not reduced for interruptible loads (4 MW), but do include standby loads (25 MW).

\* Evening peaks are system peaks except for 1996 and 2006 when day peaks were the system peaks.



**EXHIBIT 23**  
**Page 2 of 2**

**Hawaiian Electric Company, Inc.**

**2008 - 2012 EVENING PEAK, DAY PEAK, MINIMUM LOAD DEMAND,  
SALES LOAD FACTOR, AND SALES UPDATE**

March 17, 2008

	NET MW										GWH SALES					
	Evening Peak					Day Peak										
	Net Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Net Peak Demand w/ DSM	% Chg	Sales Load Factor w/ DSM	Net Peak Demand w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Net Peak Demand w/ DSM	% Chg	Recorded Sales w/o DSM	Acquired DSM Program Impact	Future DSM Program Impact	Recorded Sales w/ DSM	% Chg
Actual																
1990	1088					68.6%	1058					6470.6				3.5%
1991	1129				3.8%	67.1%	1101				4.1%	6539.0				1.1%
1992	1123				-0.5%	67.2%	1099				-0.2%	6650.4				1.7%
1993	1140				1.5%	68.1%	1112				1.2%	6607.4				-0.6%
1994	1158				1.6%	68.6%	1125				1.2%	6797.4				2.9%
1995	1159	-2		1157	-0.1%	69.8%	1167	-1			3.6%	6962.8				2.4%
1996 *	1183	-7		1176	1.6%	68.3%	1177	-7		1166	0.3%	7094.7	-3.6		7091.1	1.8%
1997	1142	-11		1131	-3.8%	70.0%	1131	-10		1170	-4.2%	7068.7	-28.4		7040.3	-0.7%
1998	1135	-15		1120	-1.0%	71.3%	1126	-14		1121	-0.8%	6989.3	-51.0		6938.3	-1.4%
1999	1183	-19		1164	3.9%	70.5%	1168	-18		1112	-0.8%	7088.3	-70.4		6997.9	0.9%
2000	1214	-23		1191	2.3%	69.7%	1192	-22		1150	3.4%	7303.3	-91.5		7211.8	3.1%
2001	1231	-27		1204	1.1%	70.1%	1216	-26		1170	1.7%	7386.3	-109.6		7276.7	0.9%
2002	1272	-30		1242	3.2%	69.1%	1243	-29		1190	1.7%	7511.5	-121.1		7390.4	1.6%
2003	1315	-34		1281	3.1%	68.7%	1280	-33		1214	2.0%	7657.3	-135.1		7522.2	1.8%
2004	1268	-38		1230	-4.0%	71.7%	1258	-38		1247	2.7%	7882.1	-149.3		7732.8	2.8%
2005	1295	-43		1252	1.8%	70.2%	1308	-43		1220	-2.2%	7886.3	-165.0		7721.3	-0.1%
2006 *	1271	-55		1216	-2.9%	72.1%	1261	-54		1265	3.7%	7892.1	-191.5		7700.6	-0.3%
2007										1207	-4.6%	7924.8	-249.4		7675.4	-0.3%
Forecast																
Forecast evening peaks are not reduced for interruptible loads (4 MW), but do include standby loads (25 MW ).																
Forecast day peaks are not reduced for interruptible loads (4 MW), but do include standby loads (25 MW).																
2008	1340	-56	-11	1273	4.7%	68.7%	1332	-56	-9	1267	5.0%	7992.6	-279.1	-36.9	7676.6	0.0%
2009	1350	-56	-20	1274	0.1%	68.6%	1343	-56	-19	1268	0.1%	8026.6	-279.1	-89.7	7657.8	-0.2%
2010	1367	-56	-28	1283	0.7%	68.6%	1361	-56	-27	1278	0.8%	8116.0	-278.7	-128.5	7708.8	0.7%
2011	1380	-49	-34	1297	1.1%	68.5%	1375	-50	-33	1292	1.1%	8195.6	-252.9	-160.5	7782.2	1.0%
2012	1413	-44	-40	1329	2.5%	68.2%	1399	-44	-39	1316	1.9%	8364.9	-213.9	-189.2	7961.8	2.3%

\* Evening peaks are system peaks except for 1996 and 2006 when day peaks were the system peaks.

**Hawaiian Electric Co., Inc.**

**RESIDENTIAL USE PER CUSTOMER FORECAST MODELS  
2008 SHORT-TERM ECONOMETRIC MODEL**

Dependent Variable: LOG(RES\_RCUSE\_ADJ)

Method: Least Squares

Date: 03/04/08 Time: 13:59

Sample (adjusted): 1998M01 2008M01

Included observations: 121 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.392160	0.540307	0.725810	0.469400
LOG(RES_RCUSE_ADJ(-6))	-0.108915	0.044830	-2.429519	0.016700
LOG(RES_RCUSE_ADJ(-12))	0.588865	0.053940	10.917070	0.000000
LOG(WETBULB_9707)	0.575826	0.083380	6.906021	0.000000
LOG(RES_RPRC_RC(-3))	-0.136888	0.033960	-4.030823	0.000100
MO_YR_TIME	0.000838	0.000126	6.648343	0.000000
M_1	0.039157	0.008245	4.749010	0.000000
R-squared	0.904869	Mean dependent var		6.519561
Adjusted R-squared	0.899862	S.D. dependent var		0.067269
S.E. of regression	0.021287	Akaike info criterion		-4.805317
Sum squared resid	0.051658	Schwarz criterion		-4.643577
Log likelihood	297.7217	F-statistic		180.7246
Durbin-Watson stat	2.094859	Prob(F-statistic)		0.000000

EViews: p mar08 st update.wf1 (res\_use\_rprc)

**Hawaiian Electric Co., Inc.**

**RESIDENTIAL USE PER CUSTOMER FORECAST MODELS  
2009 LONG-TERM ECONOMETRIC MODEL**

Dependent Variable: LOG(RES\_USE\_ADJ)

Method: Least Squares

Date: 03/04/08 Time: 14:12

Sample (adjusted): 1977 2007

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.462200	0.581263	-0.795165	0.433700
LOG(RES_USE_ADJ(-1))	0.885180	0.049547	17.865380	0.000000
LOG(CDD_7807)	0.129655	0.052613	2.464326	0.020700
LOG(YPC_R_HON)	0.103120	0.033650	3.064531	0.005000
LOG(RES_R_PRICE)	-0.029717	0.015105	-1.967342	0.059900
R-squared	0.952161	Mean dependent var		8.949681
Adjusted R-squared	0.944802	S.D. dependent var		0.057044
S.E. of regression	0.013402	Akaike info criterion		-5.640115
Sum squared resid	0.004670	Schwarz criterion		-5.408827
Log likelihood	92.42178	F-statistic		129.3736
Durbin-Watson stat	2.315384	Prob(F-statistic)		0.000000

EViews: p mar08 lt update.wf1 (res\_uselt\_ypc)

**Hawaiian Electric Co., Inc.**

**RESIDENTIAL USE MODEL VARIABLE DEFINITIONS**

2008 forecast: Short-term econometric model

RES_RCUSE_ADJ	Dependent variable Residential recorded use per customer
C	Constant
RES_RCUSE_ADJ(-X)	Residential recorded use, lag X months
WETBULB_9707	Wet Bulb Temperature, 1997-2007 monthly average
RES_RPRC_RC(-X)	Residential recorded \$/kWh, lag X months
MO_YR_TIME	Time trend
M_X	Dummy variable, month X

2009 forecast: Long-term econometric model

RES_USE_ADJ	Dependent variable Residential billed use per customer
C	Constant
RES_USE_ADJ(-X)	Residential billed use, lag X years
CDD_7807	Cooling Degree Days, 1978-2007 average
YPC_R_HON	Real (1992\$) personal income per capita, Honolulu
RES_R_PRICE	Real (1992\$) residential billed \$/kWh

**Hawaiian Electric Co., Inc.**

**COMMERCIAL SALES FORECAST MODEL  
2008 SHORT-TERM ECONOMETRIC MODEL**

Dependent Variable: LOG(COM\_RECD\_ADJ)

Method: Least Squares

Date: 03/04/08 Time: 14:25

Sample (adjusted): 1998M01 2008M01

Included observations: 121 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.593430	1.288362	8.998582	0.0000
LOG(COM_RECD_ADJ(-1))	-0.227441	0.034097	-6.670439	0.0000
LOG(COM_RECD_ADJ(-4))	0.130259	0.033435	3.895858	0.0002
LOG(COM_RECD_ADJ(-12))	0.241863	0.053267	4.540591	0.0000
LOG(CDD_7807)	0.070197	0.016368	4.288711	0.0000
LOG(WETBULB_9707)	0.801942	0.098888	8.109568	0.0000
LOG(E_NF_HON(-1))	0.242486	0.092928	2.609386	0.0103
MO_YR_TIME	0.000525	0.000142	3.705249	0.0003
M_2	-0.038583	0.007150	-5.396098	0.0000
M_8	0.032597	0.005800	5.620064	0.0000
M_10	0.019209	0.005458	3.519467	0.0006
R-squared	0.961021	Mean dependent var	19.935570	
Adjusted R-squared	0.957478	S.D. dependent var	0.069448	
S.E. of regression	0.014321	Akaike info criterion	-5.567687	
Sum squared resid	0.022560	Schwarz criterion	-5.313524	
Log likelihood	347.8451	F-statistic	271.2063	
Durbin-Watson stat	1.873960	Prob(F-statistic)	0.000000	

EViews: p mar08 st update.wf1 (com\_st\_enf)

**Hawaiian Electric Co., Inc.**

**COMMERCIAL SALES FORECAST MODEL  
2009 LONG-TERM ECONOMETRIC MODEL**

Dependent Variable: LOG(COM\_KWH\_ADJ)

Method: Least Squares

Date: 03/04/08 Time: 14:13

Sample (adjusted): 1977 2007

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.998666	1.085298	4.605799	0.0001
LOG(COM_KWH_ADJ(-1))	0.564773	0.072681	7.770564	0.0000
LOG(COM_R_PRICE)	-0.030733	0.009964	-3.084420	0.0049
LOG(CDD_7807)	0.249502	0.039315	6.346203	0.0000
LOG(E_NF_HON)	0.419543	0.087826	4.776992	0.0001
D_96ON	0.041290	0.009210	4.482896	0.0001
R-squared	0.997392	Mean dependent var	22.245870	
Adjusted R-squared	0.996870	S.D. dependent var	0.175172	
S.E. of regression	0.009800	Akaike info criterion	-6.240865	
Sum squared resid	0.002401	Schwarz criterion	-5.963319	
Log likelihood	102.7334	F-statistic	1911.993	
Durbin-Watson stat	1.733502	Prob(F-statistic)	0.000000	

EViews: p mar08 lt update.wf1 (com\_lt\_enf)

**Hawaiian Electric Co., Inc.**

**COMMERCIAL SALES MODEL VARIABLE DEFINITIONS**

2008 forecast: Short-term econometric model

COM_RECD_ADJ	Dependent variable Recorded monthly commercial sales
C	Constant
COM_RECD_ADJ(-X)	Recorded commercial sales, lag X months
CDD_7807	Cooling Degree Days, 1978-2007 monthly average
WETBULB_9707	Wet Bulb Temperature, 1997-2007 monthly average
E_NF_HON(-X)	Honolulu non-farm jobs, lag X months
MO_YR_TIME	Time trend
M_X	Dummy variable, month X

2009 forecast: Long-term econometric model

COM_KWH_ADJ	Dependent variable Billed annual commercial sales
C	Constant
COM_KWH_ADJ(-X)	Billed commercial sales, lag X months
CDD_7807	Cooling Degree Days, 1978-2007 average
E_NF_HON	Honolulu non-farm jobs
COM_R_PRICE	Real (1992\$) commercial billed \$/kWh
D_96ON	Dummy variable for 1996 and thereafter

Hawaiian Electric Co., Inc.  
2008 SHORT-TERM RESIDENTIAL USE MODEL VARIABLES

Date	Res_Cust	Res_recd	Res_recd_adj	Res_rcuse_adj	res_rprc_rc	CDD_7807	Wetbulb_9707	m_1	mo_yr_time
Jan-97	237763	161245746	161801882	680.517	\$ 0.12219	231	67.1	1	253
Feb-97	237767	137997201	138566103	582.781	\$ 0.12485	279	67.5	0	254
Mar-97	237774	151676994	152263713	640.372	\$ 0.12405	326	68.8	0	255
Apr-97	238846	150194760	150801571	631.376	\$ 0.12267	346	69.1	0	256
May-97	238407	148776502	149400619	626.662	\$ 0.12153	355	68.1	0	257
Jun-97	237779	153252758	153899747	647.239	\$ 0.11889	489	72.0	0	258
Jul-97	238085	159184791	159860839	671.444	\$ 0.11665	521	72.5	0	259
Aug-97	238226	162090514	162797768	683.375	\$ 0.11863	553	73.3	0	260
Sep-97	238648	163775088	164520789	689.387	\$ 0.11674	537	73.7	0	261
Oct-97	238676	160195025	160978986	674.467	\$ 0.11808	492	72.7	0	262
Nov-97	238432	147718517	148538186	622.979	\$ 0.11813	350	68.6	0	263
Dec-97	238825	156067600	156944030	657.151	\$ 0.12515	288	66.5	0	264
Jan-98	239301	159141474	160042387	668.791	\$ 0.11870	238	65.8	1	265
Feb-98	239017	134532325	135456774	566.724	\$ 0.11878	227	65.1	0	266
Mar-98	239565	154007827	154953831	646.813	\$ 0.11802	322	67.1	0	267
Apr-98	239483	139933078	140899768	588.350	\$ 0.11341	309	66.1	0	268
May-98	239219	151310134	152297762	636.646	\$ 0.11269	368	67.2	0	269
Jun-98	239094	148608567	149612843	625.749	\$ 0.11219	407	69.1	0	270
Jul-98	239287	152809991	153840441	642.912	\$ 0.11166	463	69.7	0	271
Aug-98	239655	161344637	162403458	677.655	\$ 0.11175	506	71.9	0	272
Sep-98	239858	154586364	155669970	649.009	\$ 0.11098	489	73.1	0	273
Oct-98	239872	154863932	155977300	650.252	\$ 0.11103	464	72.3	0	274
Nov-98	239547	153132916	154267492	643.997	\$ 0.11020	390	70.4	0	275
Dec-98	239945	156517281	157689734	657.191	\$ 0.11458	310	68.2	0	276
Jan-99	240152	162531045	163722333	681.745	\$ 0.10905	267	67.5	1	277
Feb-99	239708	138258256	139468279	581.826	\$ 0.10456	248	66.2	0	278
Mar-99	240986	148603167	149835857	621.762	\$ 0.10798	305	66.2	0	279
Apr-99	240773	146853547	148109812	615.143	\$ 0.10933	317	66.9	0	280
May-99	240223	154262386	155540984	647.486	\$ 0.11203	383	69.2	0	281
Jun-99	241320	150032928	151336577	627.120	\$ 0.11418	417	69.4	0	282
Jul-99	241158	157186058	158512836	657.299	\$ 0.11466	452	70.8	0	283
Aug-99	241128	160396080	161745822	670.788	\$ 0.11548	500	70.6	0	284
Sep-99	242111	156009620	157378697	650.027	\$ 0.11734	460	71.0	0	285
Oct-99	241729	156422181	157815141	652.860	\$ 0.11854	421	71.4	0	286
Nov-99	242143	153598105	155019574	640.198	\$ 0.12144	361	69.9	0	287
Dec-99	242579	161819621	163281613	673.107	\$ 0.12292	289	69.5	0	288
Jan-00	242071	164855885	166336561	687.140	\$ 0.12071	241	66.1	1	289
Feb-00	242626	146086156	147588474	608.296	\$ 0.12219	256	68.1	0	290
Mar-00	243108	154213429	155767469	640.734	\$ 0.12691	331	68.4	0	291
Apr-00	242569	145732974	147308363	607.284	\$ 0.12668	318	67.5	0	292
May-00	243134	158535799	160127863	658.599	\$ 0.12535	419	69.7	0	293
Jun-00	243131	154840095	156449941	643.480	\$ 0.12686	470	71.7	0	294
Jul-00	243082	162704311	164330262	676.028	\$ 0.12787	508	72.7	0	295
Aug-00	244083	166893925	168537693	690.493	\$ 0.12976	517	72.6	0	296
Sep-00	243918	159202570	160864763	659.503	\$ 0.12876	476	72.9	0	297
Oct-00	244763	165301860	166980635	682.214	\$ 0.12867	482	72.4	0	298
Nov-00	244626	156465667	158163173	646.551	\$ 0.13211	382	71.1	0	299
Dec-00	245027	162858129	164585968	671.705	\$ 0.13297	307	69.4	0	300
Jan-01	245249	168199072	169937548	692.918	\$ 0.12773	332	69.8	1	301
Feb-01	245336	138581466	140331587	571.998	\$ 0.12714	262	68.5	0	302
Mar-01	245589	157608387	159371688	648.937	\$ 0.12447	319	68.2	0	303
Apr-01	245509	151041078	152819017	622.458	\$ 0.12292	356	69.2	0	304
May-01	245924	158459666	160250928	651.628	\$ 0.12481	415	69.5	0	305
Jun-01	245888	156164712	157972085	642.455	\$ 0.12472	451	70.4	0	306
Jul-01	246014	169050492	170872772	694.565	\$ 0.12687	515	71.7	0	307
Aug-01	246497	168178830	170019487	689.743	\$ 0.12424	541	72.6	0	308
Sep-01	246523	166165058	168023775	681.574	\$ 0.12646	522	72.1	0	309
Oct-01	247246	165373661	167254141	676.469	\$ 0.12509	467	71.4	0	310
Nov-01	247251	160728011	162630822	657.756	\$ 0.12063	375	70.8	0	311
Dec-01	247672	164892692	166818762	673.547	\$ 0.11327	357	69.6	0	312
Jan-02	248060	169557921	171500022	691.365	\$ 0.11268	292	69.1	1	313
Feb-02	247722	144766301	146725103	592.297	\$ 0.11229	234	64.8	0	314
Mar-02	248160	159218459	161191553	649.547	\$ 0.11144	290	66.4	0	315
Apr-02	248466	160233968	162223035	652.898	\$ 0.11470	360	69.4	0	316
May-02	248618	166975644	168977004	679.665	\$ 0.11741	414	71.1	0	317
Jun-02	248129	168206655	170223495	686.028	\$ 0.11984	481	71.2	0	318
Jul-02	248834	170105775	172140927	691.790	\$ 0.12078	503	72.2	0	319
Aug-02	248628	180052348	182110426	732.461	\$ 0.12153	539	72.9	0	320
Sep-02	249384	172985192	175057577	701.960	\$ 0.12206	495	72.1	0	321
Oct-02	249565	175608795	177699564	712.037	\$ 0.12431	479	71.6	0	322
Nov-02	249721	164755154	166864071	668.202	\$ 0.12585	383	70.4	0	323
Dec-02	249896	170189235	172321974	689.575	\$ 0.12666	329	68.0	0	324
Jan-03	250384	172348798	174505518	696.952	\$ 0.12412	240	66.2	1	325
Feb-03	250128	148135121	150309447	600.930	\$ 0.12690	250	65.9	0	326
Mar-03	250661	165735640	167926598	669.935	\$ 0.12879	338	69.4	0	327
Apr-03	250688	163954656	166168177	662.849	\$ 0.13008	374	68.6	0	328
May-03	250787	168122701	170359351	679.299	\$ 0.13067	439	69.4	0	329
Jun-03	250466	171657756	173919343	694.383	\$ 0.12567	471	71.0	0	330



Hawaiian Electric Co., Inc.  
2008 SHORT-TERM RESIDENTIAL USE MODEL VARIABLES

Date	Res_Cust	Res_recd	Res_recd_adj	Res_rcuse_adj	res_rprc_rc	CDD_7807	Wetbulb_9707	m_1	mo_yr_time
Jul-03	251412	179035507	181316060	721.191	\$ 0.12408	545	72.5	0	331
Aug-03	250927	186728189	189029732	753.326	\$ 0.12363	573	72.2	0	332
Sep-03	252167	177890447	180210987	714.649	\$ 0.12265	518	72.7	0	333
Oct-03	252096	185606047	187959150	745.586	\$ 0.12264	504	73.9	0	334
Nov-03	252230	172174540	174544241	692.004	\$ 0.12132	420	71.1	0	335
Dec-03	253033	175133060	177520429	701.570	\$ 0.12353	336	68.8	0	336
Jan-04	253130	178384194	180784135	714.195	\$ 0.12171	272	68.3	1	337
Feb-04	252587	161501186	163913547	648.939	\$ 0.12348	323	69.7	0	338
Mar-04	253502	169972944	172402768	680.084	\$ 0.12396	317	68.2	0	339
Apr-04	253152	166966002	169407904	669.194	\$ 0.12374	371	70.6	0	340
May-04	253130	174811446	177267639	700.303	\$ 0.12598	453	73.4	0	341
Jun-04	253328	178551997	181035446	714.629	\$ 0.12440	496	72.5	0	342
Jul-04	253333	188781364	191284900	755.073	\$ 0.12401	556	73.5	0	343
Aug-04	253883	197826498	200348496	789.137	\$ 0.12569	558	74.0	0	344
Sep-04	254959	190684594	193224482	757.865	\$ 0.12912	537	75.6	0	345
Oct-04	253878	187786033	190347728	749.761	\$ 0.13291	517	72.8	0	346
Nov-04	254365	178100048	180682459	710.328	\$ 0.13769	383	71.7	0	347
Dec-04	254797	177962277	180571022	708.686	\$ 0.13965	324	68.7	0	348
Jan-05	255270	180689474	183311847	718.110	\$ 0.12552	245	68.6	1	349
Feb-05	255086	155194921	157832384	618.742	\$ 0.12338	255	66.5	0	350
Mar-05	255502	167526508	170179829	666.061	\$ 0.12236	280	66.6	0	351
Apr-05	255559	168257875	170924017	668.824	\$ 0.12741	419	68.6	0	352
May-05	255566	180645083	183328665	717.344	\$ 0.13256	514	71.2	0	353
Jun-05	256189	181895518	184596166	720.547	\$ 0.13571	537	71.7	0	354
Jul-05	256360	188023777	190745944	744.055	\$ 0.14112	570	72.0	0	355
Aug-05	256883	195107511	197855134	770.215	\$ 0.14165	588	72.4	0	356
Sep-05	256706	188548066	191317239	745.278	\$ 0.14592	491	72.6	0	357
Oct-05	256962	182998307	185819623	723.140	\$ 0.15438	430	70.7	0	358
Nov-05	257345	171894763	174761972	679.096	\$ 0.15602	371	70.7	0	359
Dec-05	257804	181752384	184685482	716.379	\$ 0.15383	270	67.2	0	360
Jan-06	258576	178941964	181905063	703.488	\$ 0.14627	293	67.6	1	361
Feb-06	257990	150504445	153496846	594.972	\$ 0.14897	205	65.0	0	362
Mar-06	258754	175927557	178945876	691.568	\$ 0.14530	275	69.2	0	363
Apr-06	258533	168873157	171913427	664.957	\$ 0.15051	299	66.4	0	364
May-06	258801	168187218	171247715	661.696	\$ 0.14891	324	66.8	0	365
Jun-06	258575	179240101	182321270	705.100	\$ 0.15468	458	69.8	0	366
Jul-06	258701	186875292	189981879	734.369	\$ 0.15450	496	70.5	0	367
Aug-06	258912	195087382	198229357	765.624	\$ 0.15496	509	71.2	0	368
Sep-06	259191	182645922	185820221	716.924	\$ 0.15407	464	70.7	0	369
Oct-06	258889	186147572	189223911	730.907	\$ 0.14536	446	71.8	0	370
Nov-06	259495	181089337	184118625	709.527	\$ 0.14201	400	71.0	0	371
Dec-06	259098	180911855	183996586	710.143	\$ 0.13838	352	67.4	0	372
Jan-07	259810	181842040	184983623	711.996	\$ 0.12869	311	67.5	1	373
Feb-07	259400	149277839	152855925	589.267	\$ 0.13154	240	65.3	0	374
Mar-07	259770	174759923	178545630	687.322	\$ 0.12684	294	67.7	0	375
Apr-07	259582	166598607	170851780	658.180	\$ 0.13141	356	66.5	0	376
May-07	259884	176973144	181503886	698.403	\$ 0.13602	421	68.6	0	377
Jun-07	259472	180851983	185756259	715.901	\$ 0.14206	478	69.8	0	378
Jul-07	259840	187927623	193159525	743.379	\$ 0.14681	524	71.0	0	379
Aug-07	260019	195805174	201451149	774.755	\$ 0.15225	538	71.1	0	380
Sep-07	259962	184516020	190414664	732.471	\$ 0.15644	504	71.1	0	381
Oct-07	260037	184137519	190168369	731.313	\$ 0.16055	477	69.9	0	382
Nov-07	259955	171945074	178349211	686.077	\$ 0.16453	357	69.5	0	383
Dec-07	260583	179900211	186647858	716.270	\$ 0.17817	335	68.4	0	384
Jan-08	261013	177084936	183832638	704.305	\$ 0.16597	273	65.2	1	385
Feb-08	259873				\$ 0.16142	238	66.6	0	386
Mar-08	260484				\$ 0.16142	304	67.8	0	387
Apr-08	260346				\$ 0.16142	345	68.1	0	388
May-08	260477				\$ 0.16142	408	69.5	0	389
Jun-08	260452				\$ 0.16142	464	70.8	0	390
Jul-08	260781				\$ 0.16142	511	71.7	0	391
Aug-08	260978				\$ 0.16142	535	72.3	0	392
Sep-08	261460				\$ 0.16142	506	72.5	0	393
Oct-08	261231				\$ 0.16142	477	71.9	0	394
Nov-08	261541				\$ 0.16142	388	70.5	0	395
Dec-08	261936				\$ 0.16142	313	68.3	0	396
Jan-09	261351				\$ 0.16645	261	67.6	1	397
Feb-09	260949				\$ 0.16645	238	66.6	0	398
Mar-09	261562				\$ 0.16645	304	67.8	0	399
Apr-09	261423				\$ 0.16645	345	68.1	0	400
May-09	261556				\$ 0.16645	408	69.5	0	401
Jun-09	261530				\$ 0.16645	464	70.8	0	402
Jul-09	261860				\$ 0.16645	511	71.7	0	403
Aug-09	262058				\$ 0.16645	535	72.3	0	404
Sep-09	262542				\$ 0.16645	506	72.5	0	405
Oct-09	262313				\$ 0.16645	477	71.9	0	406
Nov-09	262624				\$ 0.16645	388	70.5	0	407
Dec-09	263020				\$ 0.16645	313	68.3	0	408

**Hawaiian Electric Co., Inc.**  
**2009 LONG-TERM RESIDENTIAL USE MODEL VARIABLES**

Year	res_cust	res_kwh_adj	res_use_adj	res_r_price	cdd_7807	wetbulb_9707	ypc_r_hon
1976	175157	1419044125	8101.555	\$ 0.11518	4395	66.6	21.12756
1977	177722	1427941624	8034.693	\$ 0.12021	4905	69.4	21.51764
1978	182887	1425647091	7795.235	\$ 0.12725	4401	68.6	21.91853
1979	185080	1452093141	7845.759	\$ 0.12126	4469	68.9	21.90344
1980	188761	1446129858	7661.169	\$ 0.13325	4633	69.6	22.03152
1981	191112	1429139256	7478.019	\$ 0.19233	4492	69.6	21.81395
1982	193627	1370713888	7079.146	\$ 0.19312	4434	68.9	21.48066
1983	195952	1378616273	7035.479	\$ 0.16420	4547	68.4	22.42715
1984	198542	1382680982	6964.174	\$ 0.16567	4878	69.3	23.67387
1985	200638	1402649335	6990.946	\$ 0.15172	4437	68.5	24.13657
1986	203903	1453470287	7128.244	\$ 0.11966	4939	70.0	24.55987
1987	208501	1520876349	7294.336	\$ 0.11556	4782	69.1	24.68871
1988	212675	1572318220	7393.056	\$ 0.10212	5040	69.9	25.23712
1989	215076	1622612720	7544.369	\$ 0.09974	4659	69.3	26.13453
1990	217471	1655465818	7612.352	\$ 0.10260	4708	68.7	26.46154
1991	221505	1673525132	7555.248	\$ 0.09881	4734	68.9	25.56972
1992	224418	1723321046	7679.068	\$ 0.09823	4779	69.3	25.71661
1993	227616	1726361515	7584.535	\$ 0.11089	4507	68.4	25.41593
1994	232010	1782248225	7681.773	\$ 0.10674	5151	70.1	24.92024
1995	234832	1806563873	7693.006	\$ 0.11301	5309	71.2	24.66919
1996	236849	1871196181	7900.376	\$ 0.11735	5052	70.5	24.32041
1997	238269	1865175241	7828.023	\$ 0.12013	4767	69.9	24.79173
1998	239487	1830059450	7641.582	\$ 0.11375	4493	68.8	25.26652
1999	241167	1855240841	7692.764	\$ 0.11388	4420	68.9	25.78126
2000	243511	1913595384	7858.353	\$ 0.12691	4707	70.1	26.74630
2001	246226	1952982553	7931.667	\$ 0.12520	4912	70.2	26.67946
2002	248765	2019702521	8118.918	\$ 0.11844	4799	69.8	27.01925
2003	251248	2095327627	8339.679	\$ 0.12514	5008	69.9	27.39848
2004	253670	2170240753	8555.370	\$ 0.12679	5107	71.5	28.42506
2005	256269	2178657912	8501.449	\$ 0.13791	4970	69.8	28.88897
2006	258793	2163768473	8361.001	\$ 0.14914	4519	69.0	28.54311
2007	259860	2199790757	8465.292	\$ 0.14404	4835	68.9	28.71298
2008	260881			\$ 0.16142	4750	69.8	28.91403
2009	261899			\$ 0.16645	4750	69.8	29.14134

Hawaiian Electric Co., Inc.  
2008 SHORT-TERM COMMERCIAL SALES MODEL VARIABLES

Date	com_recd	com_recd_adj	E_NF_Hon	CDD_7807	Wetbulb_9707	m_2	m_8	m_10	mo_yr_time
Jan-97	404741122	405436005	401.7	231	67.1	0	0	0	253
Feb-97	374630595	375375109	404.8	279	67.5	1	0	0	254
Mar-97	423133614	424298922	407.2	326	68.8	0	0	0	255
Apr-97	419849501	421193652	404.4	346	69.1	0	0	0	256
May-97	422805793	424249273	406.7	355	68.1	0	0	0	257
Jun-97	432784994	434417705	407.2	489	72.0	0	0	0	258
Jul-97	456659960	458490008	398.2	521	72.5	0	0	0	259
Aug-97	454019187	455967542	400.3	553	73.3	0	1	0	260
Sep-97	461761864	463806259	396.8	537	73.7	0	0	0	261
Oct-97	469384398	471733232	401.1	492	72.7	0	0	1	262
Nov-97	421568097	424027235	405.4	350	68.6	0	0	0	263
Dec-97	407851599	410422349	409.6	288	66.5	0	0	0	264
Jan-98	407123514	409849553	399.0	238	65.8	0	0	0	265
Feb-98	366753863	369541197	402.4	227	65.1	1	0	0	266
Mar-98	427782290	430632649	404.4	322	67.1	0	0	0	267
Apr-98	393616446	396497283	402.1	309	66.1	0	0	0	268
May-98	417168069	420204336	403.1	368	67.2	0	0	0	269
Jun-98	420551314	423652192	402.2	407	69.1	0	0	0	270
Jul-98	436127836	439326613	395.1	463	69.7	0	0	0	271
Aug-98	464184470	467502953	397.1	506	71.9	0	1	0	272
Sep-98	444674977	448168220	396.9	489	73.1	0	0	0	273
Oct-98	455909950	459525935	398.7	464	72.3	0	0	1	274
Nov-98	426046863	429804566	403.0	390	70.4	0	0	0	275
Dec-98	418738594	422617585	406.9	310	68.2	0	0	0	276
Jan-99	405610414	409560042	392.3	267	67.5	0	0	0	277
Feb-99	375464669	379452440	396.7	248	66.2	1	0	0	278
Mar-99	415904991	420002875	399.8	305	66.2	0	0	0	279
Apr-99	409802325	414020790	400.8	317	66.9	0	0	0	280
May-99	434510879	438833163	402.2	383	69.2	0	0	0	281
Jun-99	424346877	428862253	403.9	417	69.4	0	0	0	282
Jul-99	436256958	440901187	396.2	452	70.8	0	0	0	283
Aug-99	460210733	464971773	399.8	500	70.6	0	1	0	284
Sep-99	445441968	450283230	400.3	460	71.0	0	0	0	285
Oct-99	449219878	454210550	403.8	421	71.4	0	0	1	286
Nov-99	420244544	425279273	408.5	361	69.9	0	0	0	287
Dec-99	436349746	441541674	413.7	289	69.5	0	0	0	288
Jan-00	396849626	402140148	399.1	241	66.1	0	0	0	289
Feb-00	399536513	404924802	406.3	256	68.1	1	0	0	290
Mar-00	434434274	439889187	409.8	331	68.4	0	0	0	291
Apr-00	402734626	408304568	409.6	318	67.5	0	0	0	292
May-00	444931131	450677510	412.9	419	69.7	0	0	0	293
Jun-00	445979790	451800790	416.1	470	71.7	0	0	0	294
Jul-00	466155473	472239935	407.6	508	72.7	0	0	0	295
Aug-00	469909910	476259915	409.0	517	72.6	0	1	0	296
Sep-00	463748817	470214580	413.1	476	72.9	0	0	0	297
Oct-00	474277746	480791066	415.3	482	72.4	0	0	1	298
Nov-00	434643199	441290292	420.3	382	71.1	0	0	0	299
Dec-00	442968883	449764262	424.5	307	69.4	0	0	0	300
Jan-01	434004326	440933726	405.9	332	69.8	0	0	0	301
Feb-01	392554395	399564716	415.2	262	68.5	1	0	0	302
Mar-01	433681739	440779558	417.9	319	68.2	0	0	0	303
Apr-01	419526085	426656391	413.0	356	69.2	0	0	0	304
May-01	449074018	456267294	414.3	415	69.5	0	0	0	305
Jun-01	441160261	448449073	419.1	451	70.4	0	0	0	306
Jul-01	466902340	474282281	409.3	515	71.7	0	0	0	307
Aug-01	480210493	487647240	410.6	541	72.6	0	1	0	308
Sep-01	465558878	473058970	412.3	522	72.1	0	0	0	309
Oct-01	462160499	469708120	408.3	467	71.4	0	0	1	310
Nov-01	434351034	441973684	410.7	375	70.8	0	0	0	311
Dec-01	436752289	444383839	413.4	357	69.6	0	0	0	312
Jan-02	417240275	424880477	401.8	292	69.1	0	0	0	313
Feb-02	382894365	390659382	408.3	234	64.8	1	0	0	314
Mar-02	432375577	440177837	411.0	290	66.4	0	0	0	315
Apr-02	426763155	434599727	405.0	360	69.4	0	0	0	316
May-02	459149712	467115722	414.7	414	71.1	0	0	0	317
Jun-02	454664215	462753320	419.6	481	71.2	0	0	0	318
Jul-02	466616152	474765058	408.0	503	72.2	0	0	0	319
Aug-02	483474992	491700265	409.0	539	72.9	0	1	0	320
Sep-02	466795547	475047406	413.0	495	72.1	0	0	0	321
Oct-02	479500444	487786737	416.5	479	71.6	0	0	1	322
Nov-02	440877432	449221212	421.3	383	70.4	0	0	0	323
Dec-02	439531241	447903628	426.2	329	68.0	0	0	0	324
Jan-03	416484856	425017044	414.2	240	66.2	0	0	0	325
Feb-03	389631183	398196590	418.8	250	65.9	1	0	0	326
Mar-03	444739190	453457802	421.0	338	69.4	0	0	0	327
Apr-03	433306704	442064976	416.6	374	68.6	0	0	0	328
May-03	454026438	462880560	421.2	439	69.4	0	0	0	329
Jun-03	455484736	464426569	420.8	471	71.0	0	0	0	330

Hawaiian Electric Co., Inc.  
2008 SHORT-TERM COMMERCIAL SALES MODEL VARIABLES

Date	com_recd	com_recd_adj	E_NF_Hon	CDD_7807	Wetbulb_9707	m_2	m_8	m_10	mo_yr_time
Jul-03	475004499	484115624	414.1	545	72.5	0	0	0	331
Aug-03	490850145	500017781	414.6	573	72.2	0	1	0	332
Sep-03	472197133	481412999	417.2	518	72.7	0	0	0	333
Oct-03	487461446	496707943	420.9	504	73.9	0	0	1	334
Nov-03	452168477	461516584	426.4	420	71.1	0	0	0	335
Dec-03	445102350	454533374	429.8	336	68.8	0	0	0	336
Jan-04	426699764	436206093	419.0	272	68.3	0	0	0	337
Feb-04	427512845	437088022	423.2	323	69.7	1	0	0	338
Mar-04	439387974	449000435	425.9	317	68.2	0	0	0	339
Apr-04	439817079	449538797	426.3	371	70.6	0	0	0	340
May-04	469274910	479151584	429.8	453	73.4	0	0	0	341
Jun-04	461287588	471195075	430.3	496	72.5	0	0	0	342
Jul-04	489760066	499722067	424.7	556	73.5	0	0	0	343
Aug-04	499848257	509899649	425.9	558	74.0	0	1	0	344
Sep-04	488465098	498581804	429.3	537	75.6	0	0	0	345
Oct-04	492513583	502767802	435.2	517	72.8	0	0	1	346
Nov-04	456082505	466381939	442.5	383	71.7	0	0	0	347
Dec-04	453272475	463757752	444.1	324	68.7	0	0	0	348
Jan-05	442155077	452679240	429.9	245	68.6	0	0	0	349
Feb-05	398755418	409315454	437.1	255	66.5	1	0	0	350
Mar-05	435464639	446069014	440.1	280	66.6	0	0	0	351
Apr-05	443652464	454327415	440.7	419	68.6	0	0	0	352
May-05	481199007	491929830	443.8	514	71.2	0	0	0	353
Jun-05	466340931	477225068	444.5	537	71.7	0	0	0	354
Jul-05	482272794	493343140	437.3	570	72.0	0	0	0	355
Aug-05	501927925	513110326	440.8	588	72.4	0	1	0	356
Sep-05	485313985	496622617	443.9	491	72.6	0	0	0	357
Oct-05	485582189	497048055	449.0	430	70.7	0	0	1	358
Nov-05	456605088	468160899	454.2	371	70.7	0	0	0	359
Dec-05	461730829	473570596	458.0	270	67.2	0	0	0	360
Jan-06	443056086	454959127	444.5	293	67.6	0	0	0	361
Feb-06	398790135	410771737	453.7	205	65.0	1	0	0	362
Mar-06	453569155	465709782	455.3	275	69.2	0	0	0	363
Apr-06	424590442	436927539	454.1	299	66.4	0	0	0	364
May-06	454196782	466955362	456.6	324	66.8	0	0	0	365
Jun-06	469607046	482630979	456.4	458	69.8	0	0	0	366
Jul-06	482239893	495347612	448.5	496	70.5	0	0	0	367
Aug-06	509307517	522523394	450.3	509	71.2	0	1	0	368
Sep-06	478429470	491771885	455.8	464	70.7	0	0	0	369
Oct-06	482869883	496315715	458.3	446	71.8	0	0	1	370
Nov-06	468321655	482089709	464.7	400	71.0	0	0	0	371
Dec-06	463727572	478441863	466.0	352	67.4	0	0	0	372
Jan-07	445321289	460145022	453.3	311	67.5	0	0	0	373
Feb-07	396978747	411941291	460.1	240	65.3	1	0	0	374
Mar-07	458093444	473218442	460.1	294	67.7	0	0	0	375
Apr-07	424764538	440086586	456.0	356	66.5	0	0	0	376
May-07	474033441	489852935	463.6	421	68.6	0	0	0	377
Jun-07	463735732	479755658	464.2	478	69.8	0	0	0	378
Jul-07	481496233	497782285	454.8	524	71.0	0	0	0	379
Aug-07	489896903	506394292	454.9	538	71.1	0	1	0	380
Sep-07	475968113	492552020	462.0	504	71.1	0	0	0	381
Oct-07	488197027	504925905	463.3	477	69.9	0	0	1	382
Nov-07	452201429	469042616	467.3	357	69.5	0	0	0	383
Dec-07	452668250	469562178	471.0	335	68.4	0	0	0	384
Jan-08	430516092	447428777	450.9	273	65.2	0	0	0	385
Feb-08			457.6	238	66.6	1	0	0	386
Mar-08			459.5	304	67.8	0	0	0	387
Apr-08			457.7	345	68.1	0	0	0	388
May-08			462.2	408	69.5	0	0	0	389
Jun-08			462.4	464	70.8	0	0	0	390
Jul-08			454.8	511	71.7	0	0	0	391
Aug-08			456.2	535	72.3	0	1	0	392
Sep-08			460.7	506	72.5	0	0	0	393
Oct-08			464.6	477	71.9	0	0	1	394
Nov-08			470.6	388	70.5	0	0	0	395
Dec-08			473.4	313	68.3	0	0	0	396
Jan-09			454.4	261	67.6	0	0	0	397
Feb-09			461.2	238	66.6	1	0	0	398
Mar-09			463.1	304	67.8	0	0	0	399
Apr-09			461.3	345	68.1	0	0	0	400
May-09			465.8	408	69.5	0	0	0	401
Jun-09			466.0	464	70.8	0	0	0	402
Jul-09			458.3	511	71.7	0	0	0	403
Aug-09			459.7	535	72.3	0	1	0	404
Sep-09			464.3	506	72.5	0	0	0	405
Oct-09			468.2	477	71.9	0	0	1	406
Nov-09			474.2	388	70.5	0	0	0	407
Dec-09			477.1	313	68.3	0	0	0	408

**Hawaiian Electric Co., Inc.**  
**2009 LONG-TERM COMMERCIAL SALES MODEL VARIABLES**

Year	com_kwh_adj	com_r_price	cdd_7807	wetbulb_9707	e_nf_hon	d_96on
1976	3193734467	\$ 0.09254	4395	66.6	291.233	0
1977	3332208756	\$ 0.09839	4905	69.4	298.433	0
1978	3448243494	\$ 0.10509	4401	68.6	312.542	0
1979	3552745637	\$ 0.10117	4469	68.9	325.767	0
1980	3664714846	\$ 0.11679	4633	69.6	333.042	0
1981	3685181523	\$ 0.17480	4492	69.6	332.300	0
1982	3608979547	\$ 0.17112	4434	68.9	325.675	0
1983	3660470772	\$ 0.14232	4547	68.4	330.100	0
1984	3841931769	\$ 0.14248	4878	69.3	334.383	0
1985	3838763223	\$ 0.12918	4437	68.5	342.275	0
1986	4080604222	\$ 0.09664	4939	70.0	351.425	0
1987	4189578192	\$ 0.09505	4782	69.1	366.525	0
1988	4405129557	\$ 0.08212	5040	69.9	378.117	0
1989	4531545348	\$ 0.08138	4659	69.3	395.550	0
1990	4727686341	\$ 0.08546	4708	68.7	410.675	0
1991	4766421332	\$ 0.08209	4734	68.9	415.592	0
1992	4869782447	\$ 0.07913	4779	69.3	418.008	0
1993	4840502581	\$ 0.08893	4507	68.4	414.792	0
1994	4968689413	\$ 0.08444	5151	70.1	411.558	0
1995	5080957623	\$ 0.08745	5309	71.2	408.258	0
1996	5223266020	\$ 0.09108	5052	70.5	404.742	1
1997	5173632566	\$ 0.09227	4767	69.9	403.617	1
1998	5113546159	\$ 0.08536	4493	68.8	400.908	1
1999	5142821535	\$ 0.08589	4420	68.9	401.500	1
2000	5337938668	\$ 0.09985	4707	70.1	411.967	1
2001	5433693246	\$ 0.09914	4912	70.2	412.500	1
2002	5437357380	\$ 0.09351	4799	69.8	412.867	1
2003	5527498122	\$ 0.10062	5008	69.9	419.633	1
2004	5643776802	\$ 0.10295	5107	71.5	429.683	1
2005	5675815719	\$ 0.11477	4970	69.8	443.250	1
2006	5667234499	\$ 0.12532	4519	69.0	455.325	1
2007	5707515441	\$ 0.11959	4835	68.9	460.875	1
2008		\$ 0.13402	4750	69.8	460.875	1
2009		\$ 0.13820	4750	69.8	464.463	1

Hawaiian Electric Company, Inc.  
Honolulu Airport Weather Data  
MONTHLY COOLING DEGREE DAYS

	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
JAN	273	311	292	245	272	240	292	332	241	267	238	231	354	294	227	190	251	236	306	301	260	267	251	205	304	223	261	263	222	159	292	276	278
FEB	291	240	205	255	323	250	234	262	256	248	227	279	266	239	248	180	244	243	189	244	289	178	217	256	285	182	195	249	220	209	238	305	209
MAR	390	294	274	280	317	338	290	319	331	305	322	326	297	334	262	285	316	250	258	325	346	285	366	300	340	270	288	311	317	250	238	336	275
APR	374	356	299	419	371	374	360	356	318	317	309	346	453	351	337	381	327	333	354	291	373	337	384	293	366	295	318	335	340	299	361	344	311
MAY	421	324	514	453	439	414	415	419	419	383	368	355	441	428	451	387	404	404	412	425	437	337	421	364	432	335	421	385	418	412	417	396	393
JUN	478	478	458	537	496	471	481	451	470	417	407	489	494	498	486	463	495	442	456	482	482	465	457	437	438	425	442	474	442	458	418	441	402
JUL	524	496	496	570	556	545	503	515	508	452	463	521	538	572	564	491	518	508	498	521	527	537	519	521	501	461	493	463	501	500	439	498	464
AUG	538	509	509	568	558	573	539	541	517	500	506	553	560	578	606	515	540	547	543	517	537	556	561	532	527	544	514	477	504	485	489	541	498
SEP	504	464	464	491	537	518	495	522	476	460	489	537	502	555	575	491	495	501	525	512	520	544	521	491	494	525	499	477	503	489	473	505	479
OCT	477	446	446	430	517	504	479	467	482	421	464	492	525	554	547	465	452	474	501	431	478	516	491	464	475	508	452	419	476	504	401	507	446
NOV	357	400	371	383	420	383	375	382	361	390	390	350	365	464	481	345	369	443	377	358	455	418	433	310	425	461	326	355	395	378	298	417	315
DEC	335	352	270	324	336	329	357	307	307	289	310	288	257	442	367	314	368	353	289	252	336	342	318	264	291	318	225	284	295	326	239	320	325
Yr	1,328	4,835	4,519	4,970	5,107	5,008	4,799	4,912	4,707	4,420	4,493	4,767	5,052	5,309	5,151	4,507	4,779	4,734	4,708	4,659	5,040	4,782	4,939	4,437	4,878	4,547	4,434	4,492	4,633	4,469	4,401	4,905	4,395

30-Yr	
78-07	261
Avg	238
	304
	345
	408
	464
	511
	535
	506
	477
	388
	313
	4,750

JAN	
FEB	
MAR	
APR	
MAY	
JUN	
JUL	
AUG	
SEP	
OCT	
NOV	
DEC	
Yr	

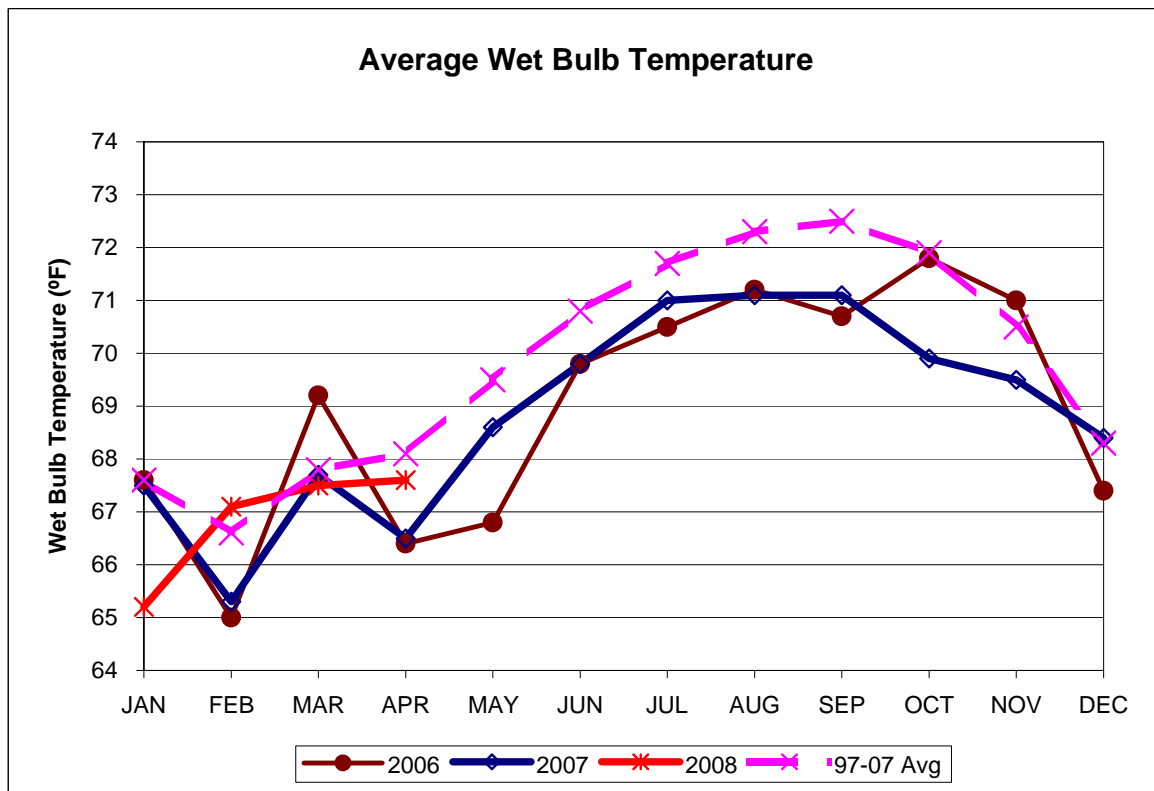
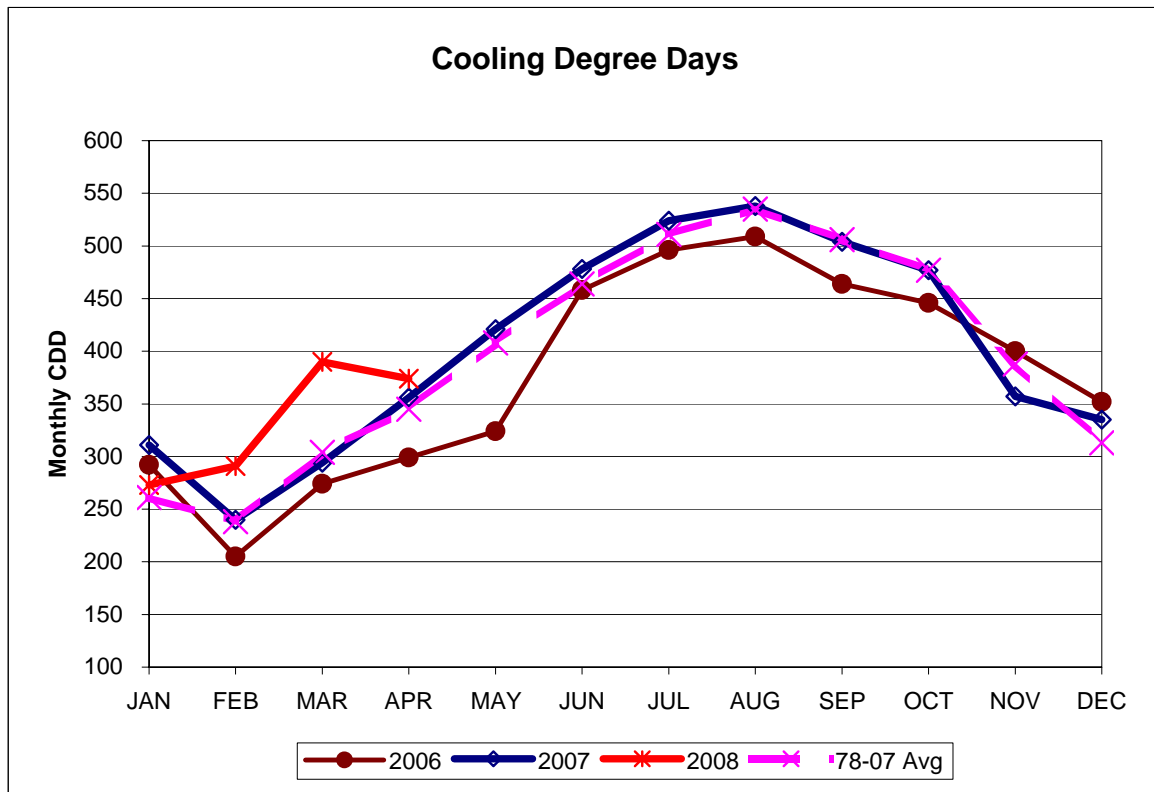
Hawaiian Electric Company, Inc.  
Honolulu Airport Weather Data  
**MONTHLY WETBULB TEMPERATURE**

	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
JAN	65.2	67.5	67.6	68.6	68.3	66.2	69.1	69.8	66.1	67.5	65.8	67.1
FEB	67.1	65.3	65.0	66.5	69.7	65.9	64.8	68.5	68.1	66.2	65.1	67.5
MAR	67.5	67.7	69.2	66.6	68.2	69.4	66.4	68.2	68.4	66.2	67.1	68.8
APR	67.6	66.5	66.4	68.6	70.6	68.6	69.4	69.2	67.5	66.9	66.1	69.1
MAY		68.6	66.8	71.2	73.4	69.4	71.1	69.5	69.7	69.2	67.2	68.1
JUN		69.8	69.8	71.7	72.5	71.0	71.2	70.4	71.7	69.4	69.1	72.0
JUL		71.0	70.5	72.0	73.5	72.5	72.2	71.7	72.7	70.8	69.7	72.5
AUG		71.1	71.2	72.4	74.0	72.2	72.9	72.6	72.6	70.6	71.9	73.3
SEP		71.1	70.7	72.6	75.6	72.7	72.1	72.1	72.9	71.0	73.1	73.7
OCT		69.9	71.8	70.7	72.8	73.9	71.6	71.4	72.4	71.4	72.3	72.7
NOV		69.5	71.0	70.7	71.7	71.1	70.4	70.8	71.1	69.9	70.4	68.6
DEC		68.4	67.4	67.2	68.7	68.8	68.0	69.6	69.4	69.5	68.2	66.5
Avg	66.9	68.9	69.0	69.9	71.6	70.1	69.9	70.3	70.2	69.1	68.8	70.0

	97-07 Avg
JAN	67.6
FEB	66.6
MAR	67.8
APR	68.1
MAY	69.5
JUN	70.8
JUL	71.7
AUG	72.3
SEP	72.5
OCT	71.9
NOV	70.5
DEC	68.3
Avg	69.8

Hawaiian Electric Co., Inc.

FORECAST ASSUMPTIONS - WEATHER





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**Hawaiian Electric Company, Inc.**

**AVERAGE ELECTRICITY PRICES (CENTS / KWH)  
CURRENT \$**

**March 2007 Forecast (Feb 08 Update)**

Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l
1975	56.3	4.329	5.228	4.328	2.948	3.740	3.488
1976	59.1	4.386	5.206	4.327	2.995	3.781	3.524
1977	62.1	4.810	5.642	4.707	3.397	4.191	3.937
1978	66.9	5.485	6.280	5.334	3.961	4.801	4.530
1979	74.4	5.813	6.590	5.654	4.279	5.121	4.850
1980	83.0	7.126	8.007	7.084	5.662	6.488	6.246
1981	91.7	11.364	12.121	11.277	9.727	10.610	10.328
1982	97.2	12.095	12.455	11.812	10.126	11.083	10.717
1983	100.5	10.633	10.967	10.286	8.618	9.590	9.216
1984	103.5	11.048	11.213	10.479	8.889	9.904	9.502
1985	106.9	10.450	10.609	9.887	8.269	9.307	8.898
1986	109.4	8.435	8.278	7.706	6.198	7.231	6.812
1987	114.9	8.555	8.492	8.035	6.383	7.435	7.037
1988	121.8	8.014	7.866	7.339	5.798	6.852	6.445
1989	128.8	8.277	8.175	7.725	6.084	7.151	6.754
1990	138.2	9.136	9.051	8.564	6.933	8.002	7.610
1991	148.0	9.423	9.219	8.709	7.148	8.241	7.828
1992	155.2	9.823	9.353	9.103	7.166	8.412	7.913
1993	160.1	11.439	10.605	10.661	8.391	9.770	9.174
1994	164.6	11.320	10.356	10.485	8.118	9.580	8.955
1995	168.2	12.248	10.823	11.335	8.549	10.200	9.478
1996	170.8	12.914	11.422	11.709	9.087	10.781	10.023
1997	172.0	13.313	11.547	12.097	9.311	11.071	10.226
1998	171.5	12.570	10.733	11.363	8.524	10.255	9.432
1999	173.3	12.716	10.939	11.472	8.602	10.416	9.591
2000	176.3	14.416	12.735	13.001	10.309	12.151	11.342
2001	178.4	14.392	12.735	12.723	10.380	12.187	11.396
2002	180.3	13.759	12.216	11.996	9.823	11.647	10.863
2003	184.5	14.877	13.292	12.968	10.927	12.762	11.961
2004	190.6	15.571	13.965	13.596	11.613	13.457	12.643
2005	197.8	17.577	15.938	15.329	13.592	15.445	14.627
2006	209.4	20.122	18.216	17.707	15.848	17.803	16.909
<b>Forecast</b>							
2007	219.5	20.371	18.279	17.632	15.810	17.881	16.913
2008	227.6	23.672	21.241	20.489	18.372	20.779	19.654
2009	235.2	25.225	22.634	21.833	19.577	22.142	20.943
2010	242.1	26.357	23.649	22.813	20.455	23.135	21.883
2011	248.8	26.978	24.206	23.350	20.937	23.680	22.398
2012	256.1	27.535	24.706	23.832	21.369	24.169	22.861
2013	265.6	28.161	25.268	24.374	21.855	24.718	23.381

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**Hawaiian Electric Company, Inc.**

**AVERAGE ELECTRICITY PRICES  
ANNUAL PERCENT CHANGE**

**March 2007 Forecast (Feb 08 Update)**

Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l
1975							
1976	5.0	1.3	-0.4	0.0	1.6	1.1	1.0
1977	5.1	9.7	8.4	8.8	13.4	10.8	11.7
1978	7.7	14.0	11.3	13.3	16.6	14.6	15.1
1979	11.2	6.0	4.9	6.0	8.0	6.7	7.1
1980	11.6	22.6	21.5	25.3	32.3	26.7	28.8
1981	10.5	59.5	51.4	59.2	71.8	63.5	65.4
1982	6.0	6.4	2.8	4.7	4.1	4.5	3.8
1983	3.4	-12.1	-11.9	-12.9	-14.9	-13.5	-14.0
1984	3.0	3.9	2.2	1.9	3.1	3.3	3.1
1985	3.3	-5.4	-5.4	-5.6	-7.0	-6.0	-6.4
1986	2.3	-19.3	-22.0	-22.1	-25.0	-22.3	-23.4
1987	5.0	1.4	2.6	4.3	3.0	2.8	3.3
1988	6.0	-6.3	-7.4	-8.7	-9.2	-7.8	-8.4
1989	5.7	3.3	3.9	5.3	4.9	4.4	4.8
1990	7.3	10.4	10.7	10.9	14.0	11.9	12.7
1991	7.1	3.1	1.9	1.7	3.1	3.0	2.9
1992	4.9	4.2	1.5	4.5	0.3	2.1	1.1
1993	3.2	16.5	13.4	17.1	17.1	16.1	15.9
1994	2.8	-1.0	-2.3	-1.7	-3.3	-1.9	-2.4
1995	2.2	8.2	4.5	8.1	5.3	6.5	5.8
1996	1.5	5.4	5.5	3.3	6.3	5.7	5.8
1997	0.7	3.1	1.1	3.3	2.5	2.7	2.0
1998	-0.3	-5.6	-7.0	-6.1	-8.5	-7.4	-7.8
1999	1.0	1.2	1.9	1.0	0.9	1.6	1.7
2000	1.7	13.4	16.4	13.3	19.8	16.7	18.3
2001	1.2	-0.2	0.0	-2.1	0.7	0.3	0.5
2002	1.1	-4.4	-4.1	-5.7	-5.4	-4.4	-4.7
2003	2.3	8.1	8.8	8.1	11.2	9.6	10.1
2004	3.3	4.7	5.1	4.8	6.3	5.4	5.7
2005	3.8	12.9	14.1	12.7	17.0	14.8	15.7
2006	5.9	14.5	14.3	15.5	16.6	15.3	15.6
<b>Forecast</b>							
* 2007	4.8	1.2	0.3	-0.4	-0.2	0.4	0.0
2008	3.7	16.2	16.2	16.2	16.2	16.2	16.2
2009	3.3	6.6	6.6	6.6	6.6	6.6	6.6
2010	2.9	4.5	4.5	4.5	4.5	4.5	4.5
2011	2.8	2.4	2.4	2.4	2.4	2.4	2.4
2012	2.9	2.1	2.1	2.1	2.1	2.1	2.1
2013	3.7	2.3	2.3	2.3	2.3	2.3	2.3

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**Hawaiian Electric Company, Inc.**

**AVERAGE ELECTRICITY PRICES (CENTS / KWH)  
ADJUSTED FOR INFLATION (1992 \$)**

**March 2007 Forecast (Feb 08 Update)**

Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l
1975	56.3	11.934	14.412	11.931	8.127	10.310	9.615
1976	59.1	11.518	13.671	11.363	7.865	9.929	9.254
1977	62.1	12.021	14.100	11.764	8.490	10.474	9.839
1978	66.9	12.725	14.569	12.374	9.189	11.138	10.509
1979	74.4	12.126	13.747	11.794	8.926	10.683	10.117
1980	83.0	13.325	14.972	13.246	10.587	12.132	11.679
1981	91.7	19.233	20.514	19.086	16.463	17.957	17.480
1982	97.2	19.312	19.887	18.860	16.168	17.696	17.112
1983	100.5	16.420	16.936	15.884	13.309	14.810	14.232
1984	103.5	16.567	16.814	15.713	13.329	14.851	14.248
1985	106.9	15.172	15.402	14.354	12.005	13.512	12.918
1986	109.4	11.966	11.744	10.932	8.793	10.258	9.664
1987	114.9	11.556	11.470	10.853	8.622	10.043	9.505
1988	121.8	10.212	10.023	9.352	7.388	8.731	8.212
1989	128.8	9.974	9.851	9.308	7.331	8.617	8.138
1990	138.2	10.260	10.164	9.617	7.786	8.986	8.546
1991	148.0	9.881	9.667	9.133	7.496	8.642	8.209
1992	155.2	9.823	9.353	9.103	7.166	8.412	7.913
1993	160.1	11.089	10.280	10.335	8.134	9.471	8.893
1994	164.6	10.674	9.765	9.886	7.654	9.033	8.444
1995	168.2	11.301	9.987	10.459	7.888	9.412	8.745
1996	170.8	11.735	10.379	10.640	8.257	9.796	9.108
1997	172.0	12.013	10.419	10.915	8.402	9.990	9.227
1998	171.5	11.375	9.713	10.283	7.714	9.280	8.536
1999	173.3	11.388	9.796	10.274	7.704	9.328	8.589
2000	176.3	12.691	11.211	11.445	9.075	10.697	9.985
2001	178.4	12.520	11.079	11.068	9.030	10.602	9.914
2002	180.3	11.844	10.515	10.326	8.456	10.026	9.351
2003	184.5	12.514	11.181	10.909	9.192	10.735	10.062
2004	190.6	12.679	11.371	11.071	9.456	10.958	10.295
2005	197.8	13.791	12.505	12.027	10.664	12.119	11.477
2006	209.4	14.914	13.501	13.123	11.746	13.195	12.532
<b>Forecast</b>							
2007	219.5	14.404	12.924	12.467	11.179	12.643	11.959
2008	227.6	16.142	14.484	13.971	12.528	14.169	13.402
2009	235.2	16.645	14.935	14.407	12.918	14.610	13.820
2010	242.1	16.896	15.160	14.624	13.113	14.831	14.028
2011	248.8	16.829	15.100	14.566	13.060	14.771	13.972
2012	256.1	16.687	14.972	14.443	12.950	14.647	13.854
2013	265.6	16.456	14.765	14.243	12.771	14.444	13.662

**HAWAIIAN ELECTRIC COMPANY, INC.**  
**RESIDENTIAL USE PER CUSTOMER MONTHLY ECONOMETRIC MODEL**  
**MARCH 2008 SALES UPDATE**

	<u>Adjusted</u> <u>Recd (no DSM)</u> <u>kWh/Cust Use</u>	<u>Y-Predicted</u> <u>from Equation</u>	<u>% Change</u> <u>Y-predicted</u>	<u>Actual</u> <u># Customers</u>	<u>Forecast</u> <u># Customers</u>	<u>% Change</u> <u>in Cust</u>	<u>Adj Recd</u> <u>Sales</u>	<u>Forecast</u> <u>Sales</u>	<u>% Change</u> <u>in Sales</u>
1997	7,808			238,269			1,860.3		
1998	7,654			239,487		0.5%	1,833.1		-1.5%
1999	7,719			241,167		0.7%	1,861.7		1.6%
2000	7,872			243,511		1.0%	1,916.9		3.0%
2001	7,904			246,226		1.1%	1,946.2		1.5%
2002	8,148			248,765		1.0%	2,026.9		4.1%
2003	8,333			251,248		1.0%	2,093.6		3.3%
2004	8,598			253,670		1.0%	2,181.1		4.2%
2005	8,488			256,269		1.0%	2,175.2		-0.3%
2006	8,389			258,793		1.0%	2,171.1		-0.2%
2007	8,445	8,445		259,860	259,860	0.4%	2,194.6	2,194.6	1.1%
2008		8,483	0.44%		260,881	0.4%		2,213.0	0.8%
2009		8,581	1.16%		261,899	0.4%		2,247.5	1.6%
2010		8,694	1.31%		263,316	0.5%		2,289.3	1.9%

**HAWAIIAN ELECTRIC COMPANY, INC.**  
**RESIDENTIAL USE PER CUSTOMER ANNUAL ECONOMETRIC MODEL**  
**MARCH 2008 SALES UPDATE**

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	Adjusted Billed (no DSM) kWh /Cust Use	Y-Predicted from Equation	% Change Y-predicted	Actual # Customers	Forecast # Customers	% Change in Cust	Adj Billed Sales	Forecast Sales	% Change in Sales
1976	8,102			175,157			1,419.0		
1977	8,035			177,722			1,427.9		
1978	7,795			182,887			1,425.6		
1979	7,846			185,080			1,452.1		
1980	7,661			188,761			1,446.1		
1981	7,478			191,112			1,429.1		
1982	7,079			193,627			1,370.7		
1983	7,035			195,952			1,378.6		
1984	6,964			198,542			1,382.7		
1985	6,991			200,638			1,402.6		
1986	7,128			203,903			1,453.5		
1987	7,294			208,501			1,520.9		
1988	7,393			212,675			1,572.3		
1989	7,544			215,076			1,622.6		
1990	7,612			217,471			1,655.5		
1991	7,555			221,505			1,673.5		
1992	7,679			224,418			1,723.3		
1993	7,585			227,616			1,726.4		
1994	7,682			232,010			1,782.2		
1995	7,693			234,832			1,806.6		
1996	7,900			236,849			1,871.2		
1997	7,828			238,269			1,865.2		
1998	7,642			239,487			1,830.1		1.4%
1999	7,693			241,167		0.7%	1,855.2		3.1%
2000	7,858			243,511		1.0%	1,913.6		2.1%
2001	7,932			246,226		1.1%	1,953.0		3.4%
2002	8,119			248,765		1.0%	2,019.7		3.7%
2003	8,340			251,248		1.0%	2,095.3		3.6%
2004	8,555			253,670		1.0%	2,170.2		0.4%
2005	8,501			256,269		1.0%	2,178.7		-0.7%
2006	8,361			258,793		1.0%	2,163.8		1.7%
2007	8,465	8,465	1.25%	259,860	259,860	0.4%	2,199.8	2,199.8	
2008		8,449	-0.19%		260,881	0.4%		2,204.3	0.2%
2009		8,434	-0.18%		261,899	0.4%		2,208.9	0.2%
2010		8,426	-0.10%		263,316	0.5%		2,218.7	0.4%
2011		8,430	0.04%		265,034	0.7%		2,234.1	0.7%
2012		8,445	0.19%		266,751	0.6%		2,252.8	0.8%



**HAWAIIAN ELECTRIC COMPANY, INC.**  
**TOTAL COMMERCIAL SALES MONTHLY ECONOMETRIC MODEL**  
**MARCH 2008 SALES UPDATE**

	<u>Adjusted</u> Recd (no DSM) <u>kWh sales</u>	<u>Y-Predicted</u> from Equation	<u>% Change</u> Y-predicted	<u>Adj Recd</u> GWh Sales	<u>Forecast</u> Sales	<u>% Change</u> in Sales
1997	5,169,417,291			5,169.4		
1998	5,117,323,082			5,117.3		-1.0%
1999	5,167,919,250			5,167.9		1.0%
2000	5,348,297,055			5,348.3		3.5%
2001	5,403,704,892			5,403.7		1.0%
2002	5,446,610,771			5,446.6		0.8%
2003	5,524,347,846			5,524.3		1.4%
2004	5,663,291,019			5,663.3		2.5%
2005	5,673,401,654			5,673.4		0.2%
2006	5,684,444,704			5,684.4		0.2%
2007	5,695,259,230	5,695,259,230	0.19%	5,695.3	5,695.3	0.2%
2008		5,796,615,181	1.78%		5,796.6	1.8%
2009		5,877,004,182	1.39%		5,877.0	1.4%
2010		5,940,944,354	1.09%		5,940.9	1.1%

HAWAIIAN ELECTRIC COMPANY, INC.  
TOTAL COMMERCIAL SALES ANNUAL ECONOMETRIC MODEL  
MARCH 2008 SALES UPDATE

	Adjusted Billed (no DSM) kWh sales	Y-Predicted from Equation	% Change Y-predicted	Adj Billed GWh Sales	Forecast Sales	% Change in Sales
1976	3,193,734,467			3,193.7		
1977	3,332,208,756			3,332.2		
1978	3,448,243,494			3,448.2		
1979	3,552,745,637			3,552.7		
1980	3,664,714,846			3,664.7		
1981	3,685,181,523			3,685.2		
1982	3,608,979,547			3,609.0		
1983	3,660,470,772			3,660.5		
1984	3,841,931,769			3,841.9		
1985	3,838,763,223			3,838.8		
1986	4,080,604,222			4,080.6		
1987	4,189,578,192			4,189.6		
1988	4,405,129,557			4,405.1		
1989	4,531,545,348			4,531.5		
1990	4,727,686,341			4,727.7		
1991	4,766,421,332			4,766.4		
1992	4,869,782,447			4,869.8		
1993	4,840,502,581			4,840.5		
1994	4,968,689,413			4,968.7		
1995	5,080,957,623			5,081.0		
1996	5,223,266,020			5,223.3		
1997	5,173,632,566			5,173.6		
1998	5,113,546,159			5,113.5		
1999	5,142,821,535		0.6%	5,142.8		0.6%
2000	5,337,938,668		3.8%	5,337.9		3.8%
2001	5,433,693,246		1.8%	5,433.7		1.8%
2002	5,437,357,380		0.1%	5,437.4		0.1%
2003	5,527,498,122		1.7%	5,527.5		1.7%
2004	5,643,776,802		2.1%	5,643.8		2.1%
2005	5,675,815,719		0.6%	5,675.8		0.6%
2006	5,667,234,499		-0.2%	5,667.2		-0.2%
2007	5,707,515,441	5,707,515,440	0.71%	5,707.5	5,707.5	0.7%
2008		5,760,706,930	0.93%		5,760.7	0.9%
2009		5,804,253,940	0.76%		5,804.3	0.8%
2010		5,848,065,080	0.75%		5,848.1	0.8%
2011		5,895,793,170	0.82%		5,895.8	0.8%
2012		5,947,196,880	0.87%		5,947.2	0.9%



Hawaiian Electric Company, Inc.  
COMMERCIAL (G,J,H,K,P) ANNUAL GWH SALES  
March 2008 Sales Update

Recd 2005	Recd 2006	Recd 2007	2008	2009	2010	2011	2012
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**SHORT-TERM FORECAST (MONTHLY ECONOMETRIC MODEL)**

ST Total Com'l Econometric Model <sup>1</sup>	5,796.6	5,877.0					
Acquired DSM Impact <sup>2</sup>	(199.2)	(199.2)					
ST Total Com'l Econm Model net of acq DSM	5,597.4	5,677.8					
Forecast Adjustment	0.0	0.0					
HMEC	-	-					
Bill 54 HMEC	(2.5)	(5.0)					
Energy Effic Improv	(16.2)	(31.3)					
ST Com GWh Sales net of acq DSM, HMEC, Eff Imprv	5,578.7	5,641.5					

**LONG-TERM FORECAST (ANNUAL ECONOMETRIC MODEL)**

LT Total Com'l Econometric Model <sup>3</sup>	5,760.7	5,804.3	5,848.1	5,895.8	5,947.2		
Acquired DSM Impact <sup>2</sup>	(199.2)	(199.2)	(199.2)	(196.8)	(179.9)		
LT Total Com'l Econm Model net of acq DSM	5,561.5	5,605.1	5,648.9	5,699.0	5,767.3		
HMEC	-	-	-	-	-		
Bill 54 HMEC	(2.5)	(5.0)	(7.5)	(9.9)	(12.5)		
Energy Effic Improv	(16.2)	(31.3)	(47.5)	(65.0)	(81.1)		
LT Com GWh Sales net of acq DSM, HMEC, Eff Imprv	5,542.8	5,568.8	5,593.9	5,624.1	5,673.7		
Large Projects <sup>4</sup>	(50.9)	(19.7)	54.9	101.3	205.2		
ST Com GWh Sales forecast	5,527.8						
% Change							
LT Com GWh Sales forecast	5,491.9	5,549.1	5,648.8	5,725.4	5,878.9		
% Change		1.0%	1.8%	1.4%	2.7%		
Com GWh Forecast no Adj <sup>5</sup>	5,541.0	5,528.7	5,503.4	5,527.8	5,585.4	5,685.8	5,762.9
% Incr.		-0.2%	-0.5%	0.4%	1.0%	1.8%	1.4%
							2.7%

<sup>1</sup> Source: com\_st\_enf (p Com kWh ST 3-08.xls) with Jan 2008 YTD recorded with acquired DSM added back to historical (1996-2007 approvals).

<sup>2</sup> 1996-2007 installations approved through 2007.

<sup>3</sup> Source: com\_lt\_enf model (p Com Sales LT 3-08.xls) with 2007 billed data with acquired DSM added back.

<sup>4</sup> Large project impacts not included in historical trends from March 2008 update, lg proj feb08.xls, incremental above 2007.

<sup>5</sup> 2008 ST monthly econometric model, 2009 - 2012 annual econometric model year-over-year percent growth.  
Excludes adjustments for leap year, CHP, NEM and future DSM.

**Hawaiian Electric Company, Inc.  
March 2008 Sales Update**

	<u>Recd</u> <u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>Sales Forecast No Adjustments</b>						
Residential	2,134.5	2,130.8	2,134.3	2,143.9	2,181.8	2,221.2
% incr		-0.2%	0.2%	0.4%	1.8%	1.8%
Commercial	5,503.4	5,527.8	5,585.4	5,685.8	5,762.9	5,917.4
% incr		0.4%	1.0%	1.8%	1.4%	2.7%
Sched F	37.5	37.5	37.5	37.5	37.5	37.5
% incr		0.0%	0.0%	0.0%	0.0%	0.0%
Total	7,675.4	7,696.1	7,757.2	7,867.2	7,982.2	8,176.1
% incr		0.3%	0.8%	1.4%	1.5%	2.4%

**Leap Year Impacts**

Residential	5.8	0.0	0.0	0.0	6.1
Commercial	15.1	0.0	0.0	0.0	16.2
Sched F	0.1	0.0	0.0	0.0	0.1
Total	21.0	0.0	0.0	0.0	22.4

**NEM & Customer PV**

Residential	-1.0	-1.5	-2.1	-2.9	-3.7
Commercial	-2.6	-8.2	-27.8	-36.6	-43.8
Total	-3.6	-9.7	-29.9	-39.5	-47.5

**Hawaiian Electric Company, Inc.  
March 2008 Sales Update**

	<u>Recd</u> <u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<b>Sales Forecast with Adjustments, No Future DSM</b>						
Residential	2,134.5	2,135.6	2,132.8	2,141.8	2,178.9	2,223.6
% incr		0.1%	-0.1%	0.4%	1.7%	2.1%
Commercial	5,503.4	5,540.3	5,577.2	5,658.0	5,726.3	5,889.8
% incr		0.7%	0.7%	1.4%	1.2%	2.9%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,713.5	7,747.5	7,837.3	7,942.7	8,151.0
% incr		0.5%	0.4%	1.2%	1.3%	2.6%

**Future DSM**

Residential	-20.9	-44.4	-54.1	-57.2	-58.2
Commercial	-16.0	-45.3	-74.4	-103.3	-131.0
Sched F	0.0	0.0	0.0	0.0	0.0
Total	-36.9	-89.7	-128.5	-160.5	-189.2

**Recommended Sales Forecast with Future DSM**

Residential	2,134.5	2,114.7	2,088.4	2,087.7	2,121.7	2,165.4
% incr		-0.9%	-1.2%	0.0%	1.6%	2.1%
Commercial	5,503.4	5,524.3	5,531.9	5,583.6	5,623.0	5,758.8
% incr		0.4%	0.1%	0.9%	0.7%	2.4%
Sched F	37.5	37.6	37.5	37.5	37.5	37.6
% incr		0.3%	-0.3%	0.0%	0.0%	0.3%
Total	7,675.4	7,676.6	7,657.8	7,708.8	7,782.2	7,961.8
% incr		0.0%	-0.2%	0.7%	1.0%	2.3%

**Hawaiian Electric Co., Inc.**  
**NET ENERGY METERING PROJECTIONS**

	Installs				Cumulative				Annual Ramped				Annualized kWh Current Yr Installs
	Residential ≤ 10 kW		Commercial > 10 kW ≤ 50kW		Residential ≤ 10 kW		Commercial > 10 kW ≤ 50kW		kWh Sales Reduction		Total		
	Quant.	KW	Quant.	KW	Quant.	KW	Quant.	KW	≤ 10 kW	>10 kW ≤ 50kW			
2006	9	21	1	50	9	21	1	50	32,576	77,563	110,139	110,139	
2007	136	400	20	567	136	421	20	617	384,289	530,459	914,748	1,497,978	
2008	178	434	26	780	314	855	46	1397	964,519	1,372,315	2,336,834	1,881,237	
2009	144	336	22	1100	458	1191	68	2497	1,490,772	2,579,675	4,070,446	2,223,922	
2010	181	422	26	1300	639	1613	94	3797	2,128,748	4,820,084	6,948,832	2,667,321	
2011	221	515	31	1550	860	2127	125	5347	2,872,926	6,995,785	9,868,711	3,199,010	
2012	227	529	39	1950	1087	2656	164	7297	3,691,166	9,643,118	13,334,283	3,840,352	
2013	311	725	45	2250	1398	3781	209	10114	4,627,017	12,941,357	17,568,374	4,608,327	

**Hawaiian Electric Co., Inc.**  
**INTERCONNECTION AGREEMENT PROJECTIONS**

	Installs		Cumulative		Annual (Ramped) kWh reduction	Annualized Current Yr
	Quant.	KW	Quant.	KW		
2006						
2007	1	225	1	225	26,784	315,450
2008	6	1801	7	2026	1,226,231	2,525,002
2009	6	7725	13	9751	5,642,457	10,830,450
2010	14	9975	27	19726	23,021,721	13,984,950
2011	13	2955	40	22681	29,651,768	4,142,910
2012	16	3510	56	26191	34,170,451	4,921,020
2013	20	4200	76	30391	39,423,647	5,888,400

Hawaiian Electric Company, Inc.  
**MARCH 2008 SALES UPDATE**

**SALES FORECAST (WITHOUT ANY ADJUSTMENTS)**

	Rate	Recorded					
		2007	2008	2009	2010	2011	2012
<b>R</b>		2,134.5	2,130.8	2,134.3	2,143.9	2,181.8	2,221.2
<b>% Incr.</b>			-0.2%	0.2%	0.4%	1.8%	1.8%
<b>G</b>		377.2	379.8	384.4	392.5	400.2	405.7
<b>% Incr.</b>			0.7%	1.2%	2.1%	2.0%	1.4%
<b>J</b>		2,054.8	2,069.0	2,099.8	2,144.7	2,186.7	2,228.0
<b>% Incr.</b>			0.7%	1.5%	2.1%	2.0%	1.9%
<b>H</b>		43.4	38.7	33.8	29.5	25.7	22.5
<b>% Incr.</b>			-10.8%	-12.7%	-12.7%	-12.9%	-12.5%
<b>P</b>		3,028.0	3,040.3	3,067.4	3,119.1	3,150.3	3,261.2
<b>% Incr.</b>			0.4%	0.9%	1.7%	1.0%	3.5%
<b>F</b>		37.5	37.5	37.5	37.5	37.5	37.5
<b>% Incr.</b>			0.0%	0.0%	0.0%	0.0%	0.0%
<b>TOTAL</b>		7,675.4	7,696.1	7,757.2	7,867.2	7,982.2	8,176.1
<b>% Incr.</b>			0.3%	0.8%	1.4%	1.5%	2.4%

**LEAP YEAR IMPACTS**

<b>R</b>		5.8	0.0	0.0	0.0	6.1
<b>G</b>		1.0	0.0	0.0	0.0	1.1
<b>J</b>		5.7	0.0	0.0	0.0	6.1
<b>H</b>		0.1	0.0	0.0	0.0	0.1
<b>P</b>		8.3	0.0	0.0	0.0	8.9
<b>F</b>		0.1	0.0	0.0	0.0	0.1
<b>TOTAL</b>		21.0	0.0	0.0	0.0	22.4

**NEM & CUSTOMER PV**

<b>R</b>		(1.0)	(1.5)	(2.1)	(2.9)	(3.7)
<b>J</b>		(1.4)	(2.6)	(5.0)	(8.0)	(11.6)
<b>P</b>		(1.2)	(5.6)	(22.8)	(28.6)	(32.2)
<b>TOTAL</b>		(3.6)	(9.7)	(29.9)	(39.5)	(47.5)

Hawaiian Electric Company, Inc.  
**MARCH 2008 SALES UPDATE**

**RECOMMENDED FORECAST (NOT REDUCED BY FUTURE DSM)**

	Recorded					
Rate	2007	2008	2009	2010	2011	2012
R	2,134.5	2,135.6	2,132.8	2,141.8	2,178.9	2,223.6
% Incr.		0.1%	-0.1%	0.4%	1.7%	2.1%
G	377.2	380.8	384.4	392.5	400.2	406.8
% Incr.		1.0%	0.9%	2.1%	2.0%	1.6%
J	2,054.8	2,073.3	2,097.2	2,139.7	2,178.7	2,222.5
% Incr.		0.9%	1.2%	2.0%	1.8%	2.0%
H	43.4	38.8	33.8	29.5	25.7	22.6
% Incr.		-10.6%	-12.9%	-12.7%	-12.9%	-12.1%
P	3,028.0	3,047.4	3,061.8	3,096.3	3,121.7	3,237.9
% Incr.		0.6%	0.5%	1.1%	0.8%	3.7%
F	37.5	37.6	37.5	37.5	37.5	37.6
% Incr.		0.3%	-0.3%	0.0%	0.0%	0.3%
TOTAL	7,675.4	7,713.5	7,747.5	7,837.3	7,942.7	8,151.0
% Incr.		0.5%	0.4%	1.2%	1.3%	2.6%

**FUTURE DSM**

<b>R</b>		(20.9)	(44.4)	(54.1)	(57.2)	(58.2)
<b>G</b>		(0.5)	(1.3)	(2.1)	(2.9)	(3.7)
<b>J</b>		(3.9)	(11.1)	(18.4)	(25.6)	(32.4)
<b>H</b>		0.0	(0.1)	(0.1)	(0.2)	(0.3)
<b>P</b>		(11.6)	(32.8)	(53.8)	(74.6)	(94.6)
<b>TOTAL</b>		(36.9)	(89.7)	(128.5)	(160.5)	(189.2)

**RECOMMENDED FORECAST (REDUCED BY FUTURE DSM)**

<b>R</b>		2,134.5	2,114.7	2,088.4	2,087.7	2,121.7	2,165.4
<b>% Incr.</b>			-0.9%	-1.2%	0.0%	1.6%	2.1%
<b>G</b>		377.2	380.3	383.1	390.4	397.3	403.1
<b>% Incr.</b>			0.8%	0.7%	1.9%	1.8%	1.5%
<b>J</b>		2,054.8	2,069.4	2,086.1	2,121.3	2,153.1	2,190.1
<b>% Incr.</b>			0.7%	0.8%	1.7%	1.5%	1.7%
<b>H</b>		43.4	38.8	33.7	29.4	25.5	22.3
<b>% Incr.</b>			-10.6%	-13.1%	-12.8%	-13.3%	-12.5%
<b>P</b>		3,028.0	3,035.8	3,029.0	3,042.5	3,047.1	3,143.3
<b>% Incr.</b>			0.3%	-0.2%	0.4%	0.2%	3.2%
<b>F</b>		37.5	37.6	37.5	37.5	37.5	37.6
<b>% Incr.</b>			0.3%	-0.3%	0.0%	0.0%	0.3%
<b>TOTAL</b>		7,675.4	7,676.6	7,657.8	7,708.8	7,782.2	7,961.8
<b>% Incr.</b>			0.0%	-0.2%	0.7%	1.0%	2.3%

**Hawaiian Electric Co., Inc.**

**RATE SCHEDULE ALLOCATION FACTORS  
FOR COMMERCIAL SALES**

Results of exponential smoothing models *					
	Sch P	Sch J	Sch H	Sch G	Total
2003	3095.6	1956.5	62.1	362.7	5476.9
2004	3143.3	1997.2	57.6	367.1	5565.2
2005	3149.3	2050.1	52.7	371.1	5623.2
2006	3174.1	2107.0	47.9	376.9	5705.9
2007	3202.6	2145.3	41.1	382.5	5771.5
2008	3252.8	2211.8	35.9	394.0	5894.5
2009	3303.8	2280.4	31.2	405.8	6021.2
2010	3355.5	2351.1	27.0	418.0	6151.6
2011	3408.1	2423.9	23.2	430.5	6285.7
2012	3461.5	2499.0	19.9	443.5	6423.9

Allocations to Rate Schedules					
	Sch P	Sch J	Sch H	Sch G	
2003	<b>56.5%</b>	<b>35.7%</b>	<b>1.1%</b>	<b>6.6%</b>	100.0%
2004	<b>56.5%</b>	<b>35.9%</b>	<b>1.0%</b>	<b>6.6%</b>	100.0%
2005	<b>56.0%</b>	<b>36.5%</b>	<b>0.9%</b>	<b>6.6%</b>	100.0%
2006	<b>55.6%</b>	<b>36.9%</b>	<b>0.8%</b>	<b>6.6%</b>	100.0%
2007	<b>55.5%</b>	<b>37.2%</b>	<b>0.7%</b>	<b>6.6%</b>	100.0%
2008	<b>55.2%</b>	<b>37.5%</b>	<b>0.6%</b>	<b>6.7%</b>	100.0%
2009	<b>54.9%</b>	<b>37.9%</b>	<b>0.5%</b>	<b>6.7%</b>	100.0%
2010	<b>54.5%</b>	<b>38.2%</b>	<b>0.4%</b>	<b>6.8%</b>	100.0%
2011	<b>54.2%</b>	<b>38.6%</b>	<b>0.4%</b>	<b>6.8%</b>	100.0%
2012	<b>53.9%</b>	<b>38.9%</b>	<b>0.3%</b>	<b>6.9%</b>	100.0%

\* Exponential smoothing models with exponential trend and additive seasonal component fit on 1976 - 2006 billed data



HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
NON-FUEL ENERGY CHARGE	2,088,400	8.2993	\$173,322.6
BASE FUEL ENERGY CHARGE	2,088,400	8.8903	<u>\$185,665.0</u>
SUBTOTAL			\$358,987.6
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/MONTH</u>	
1 PHASE CHARGE	3,141,216	8.00	\$25,129.7
3 PHASE CHARGE	<u>1,571</u>	17.00	<u>\$26.7</u>
SUBTOTAL	3,142,787		\$25,156.4
<u>ADJUSTMENTS:</u>			
SCHEDULE E ADJ.			(\$1,392.7)
MINIMUM BILL ADJ. - 1 PHASE			\$72.2
MINIMUM BILL ADJ. - 3 PHASE			\$0.0
APARTMENT HOUSE:			<u>(\$56.0)</u>
SUBTOTAL			(\$1,376.5)
TOTAL BASE REVENUE			\$382,767.5
<u>BILL ADJUSTMENTS:</u>			
FUEL OIL ADJUSTMENT:	<u>¢/KWH</u>	7.221	<u>\$150,803.4</u>
Total Revenues at Present Rates			\$533,570.9
2007 Interim Rate Increase		7.12%	\$27,253.0
Total Revenues at Current Effective Rates			\$560,823.9

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
NON-FUEL ENERGY CHARGE	2,088,400	8.2993	\$173,322.6
BASE FUEL ENERGY CHARGE	2,088,400	8.8903	<u>\$185,665.0</u>
SUBTOTAL			\$358,987.6
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/MONTH</u>	
1 PHASE CHARGE	3,141,216	8.00	\$25,129.7
3 PHASE CHARGE	<u>1,571</u>	17.00	<u>\$26.7</u>
SUBTOTAL	3,142,787		\$25,156.4
<u>ADJUSTMENTS:</u>			
FUEL OIL ADJUSTMENT:	¢/KWH	7.221	\$150,803.4
MISCELLANEOUS **:			<u>(\$1,376.5)</u>
SUBTOTAL			\$149,426.9
TOTAL REVENUES AT PRESENT RATES			\$533,570.9
2007 INTERIM RATE INCREASE REVENUES		7.12%	\$27,253.0
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$560,823.9</u>

\*\* INCLUDES Schedule E Adj., Minimum Bill Adj., Apartment House Discount.

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS  
BY CUSTOMER GROUP

<u>RECORDED:</u>	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>
RESIDENTIAL-R 1 Phase	3,122,672	99.15	2,102,276	98.83
RESIDENTIAL-R 3 Phase	1,543	0.05	3,781	0.18
EMPLOYEES-E 1 Phase	25,247	0.80	21,014	0.99
EMPLOYEES-E 3 Phase	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>
TOTAL R AND E	3,149,462	100.00	2,127,071	100.00
APT. HOUSE DISCOUNT	12,160	0.39	4,797	0.23

<u>FORECASTS:</u>	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
RESIDENTIAL-R 1 Phase	99.15	3,116,074	98.83	2,063,966
RESIDENTIAL-R 3 Phase	0.05	1,571	0.18	3,759
EMPLOYEES-E 1 Phase	0.80	25,142	0.99	20,675
EMPLOYEES-E 3 Phase	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>
TOTAL R AND E	100.00	3,142,788	100.00	2,088,400
APT. HOUSE DISCOUNT	0.39	12,257	0.23	4,803

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

DETERMINATION OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR MINIMUM CHARGE PROVISION

<u>1 PHASE</u>	<u>PRESENT RATES</u>
MINIMUM CHRG.,\$/MO.	16.00
BASE RATE,\$/kWh	0.171896
F.O.A.,\$/kWh	0.072210
CUSTOMER CHRG, \$/M0	8.00
MINIMUM kWh/MONTH	32.77

<u>3 PHASE</u>	
MINIMUM CHRG.,\$/MO.	22.00
BASE RATE,\$/kWh	0.171896
F.O.A.,\$/kWh	0.072210
CUSTOMER CHRG, \$/M0	17.00
MINIMUM kWh/MONTH	20.48

<u>1 PHASE</u>	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL R,E 1 Phase	2,123,290	2,084,641
<= MIN.KWH 32 (-1)	269	271
% OF TOTAL	0.013	

<u>NUMBER OF BILLS</u>		
TOTAL R,E 1 Phase	3,147,919	3,141,216
<= MIN.KWH 32 (-1)	17,332	17,308
% OF TOTAL	0.551	

<u>3 PHASE</u>	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL R,E 3 Phase	3,781	3,759
<= MIN.KWH 20 (-1)	0	0
% OF TOTAL	0.001	

<u>NUMBER OF BILLS</u>		
TOTAL R,E 3 Phase	1,543	1,571
<= MIN.KWH 20 (-1)	11	11
% OF TOTAL	0.713	

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATES OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR MINIMUM CHARGE PROVISION

AT PRESENT RATES

<u>1 PHASE</u>	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000s</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>MWH</u>	<u>¢/KWh</u>	
BASE ENERGY CHARGE	271	17.1896	\$46.6
FUEL OIL ADJUSTMENT:	271	7.221	\$19.6
	<u>BILLS</u>	<u>\$/MONTH</u>	
CUSTOMER CHARGE	17,308	8.00	<u>\$138.5</u>
TOTAL, No Min Chrg Provision			\$204.7
	<u>BILLS</u>	<u>\$/MONTH</u>	
AS BILLED WITH MINIMUM CHARGE:	17,308	16.00	<u>\$276.9</u>
1 PHASE - MINIMUM BILL ADJ.			\$72.2

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATES OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR MINIMUM CHARGE PROVISION

AT PRESENT RATES

<u>3 PHASE</u>	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000s</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>MWH</u>	<u>¢/KWh</u>	
BASE ENERGY CHARGE	-	17.1896	\$0.0
FUEL OIL ADJUSTMENT:	-	7.221	\$0.0
	<u>BILLS</u>	<u>\$/MONTH</u>	
CUSTOMER CHARGE	11	17.00	<u>\$0.2</u>
TOTAL, No Min Chrg Provision			\$0.2
	<u>BILLS</u>	<u>\$/MONTH</u>	
AS BILLED WITH MINIMUM CHARGE:	11	22.00	<u>\$0.2</u>
3 PHASE - MINIMUM BILL ADJ.			\$0.0

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR EMPLOYEE SERVICE

ALL SINGLE PHASE

	RECORDED	FORECAST
<u>MWH SALES:</u>		
0-825 KWH	7,620	7,497
>825 KWH	13,395	13,178
TOTAL	<u>21,014</u>	<u>20,675</u>

<u>NUMBER OF BILLS:</u>		
0-825 KWH	14,541	14,481
>825 KWH	10,706	10,661
TOTAL	<u>25,247</u>	<u>25,142</u>

	UNITS BILLED (MWH)	UNIT PRICE ¢/KWH	REVENUES \$1000s
<u>EMPLOYEE DISCOUNT</u> 0-825 KWH			
ENERGY CHARGE	7497	17.1896	\$1,288.7
FUEL OIL ADJUSTMENT:	7497	7.221	\$541.4
SUBTOTAL			<u>\$1,830.1</u>
	<u>BILLS</u>		
CUSTOMER CHARGE	14481	8.00	\$115.8
TOTAL			<u>\$1,945.9</u>
<u>-1/3 EMPLOYEE ADJUSTMENT</u>			<u>(\$648.6)</u>

	UNITS BILLED (MWH)	UNIT PRICE ¢/KWH	REVENUES \$1000s
<u>EMPLOYEE DISCOUNT</u> >825 KWH LIMITED to 825 KWH			
ENERGY CHARGE	8795	17.1896	\$1,511.8
FUEL OIL ADJUSTMENT:	8795	7.221	\$635.1
SUBTOTAL			<u>\$2,146.9</u>
	<u>BILLS</u>		
CUSTOMER CHARGE	10661	8.00	\$85.3
TOTAL			<u>\$2,232.2</u>
<u>-1/3 EMPLOYEE ADJUSTMENT</u>			<u>(\$744.1)</u>
<u>TOTAL EMPLOYEE ADJ:</u>			<u>(\$1,392.7)</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR APARTMENT HOUSE COLLECTION PROVISION

	<u>PRESENT RATES</u>
MAX Bill 100% Disc.,\$/MO.	50.00
BASE ENERGY ,\$/KWH	0.171896
F.O.A., \$/KWH	0.07221
	0.00000
INTERIM RATE ADJUSTMENT, %	0.07120
CUST. CHG., \$/BILL	8.00
 KWH BLOCK @ MAX.DISC.	 161.62

	<u>PRESENT RATES</u>	
	<u>RECORDED (MWH)</u>	<u>FORECAST (MWH)</u>
<u>SALES:</u>		
0-161 (-1) KWH	288	289
>161 (-1) KWH	<u>4,509</u>	<u>4,514</u>
 TOTAL	 4,797	 4,803
 <u>NUMBER OF BILLS:</u>	 <u>RECORDED BILLS</u>	 <u>FORECAST BILLS</u>
0-161 (-1) KWH	2,917	2,940
>161 (-1) KWH	<u>9,243</u>	<u>9,317</u>
 TOTAL	 12,160	 12,257



HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR APARTMENT HOUSE COLLECTION PROVISION

	<u>PRESENT RATES</u>		
	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
Apt. Bills subject to 100% of Apt. House Discount	<u>MWH</u>	<u>¢/kWh</u>	
ENERGY CHARGE	289	17.1896	\$49.7
	<u>Bills</u>	<u>\$/month</u>	
CUSTOMER CHARGE	2,940	8.00	<u>\$23.5</u>
TOTAL BASE CHARGES			<u>\$73.2</u>
FUEL OIL ADJUSTMENT:	7.221 ¢/KWH		\$20.9
	0.000 (%)		<u>\$0.0</u>
TOTAL ADJUSTMENTS			<u>\$20.9</u>
TOTAL OF BILLS subject to 10% discount			\$94.1
10% APT DISC.			(\$9.4)
	<u>Bills</u>	<u>\$/month</u>	
Apt. House Bills subject to Maximum Discount	9,317	5.00	<u>(\$46.6)</u>
APT. HOUSE REVENUE ADJ.			(\$56.0)

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-00830083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

ESTIMATE OF TEST YEAR REVENUES

<u>PRESENT RATES</u>			
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE - Regular	192,348	30.00	\$5,770.4
3 PHASE - Regular	<u>122,976</u>	55.00	<u>\$6,763.7</u>
SUBTOTAL	315,324		\$12,534.1
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
G: Regular NON-DEMAND	<u>383,100</u>	16.4205	<u>\$62,906.9</u>
Total	383,100		\$62,906.9
<u>BASE REVENUE ADJUSTMENTS:</u>			
DP VOLTAGE ADJUSTMENT			(\$0.5)
DS VOLTAGE ADJUSTMENT			(\$0.1)
MINIMUM BILL ADJUSTMENT			\$0.0
SUBTOTAL			<u>(\$0.6)</u>
TOTAL BASE REVENUE			<u>\$75,440.4</u>
<u>Other Adjustments:</u>	<u>Rate</u>		
FUEL OIL ADJUSTMENT:	7.221 ¢/KWH		\$27,663.7
TOTAL REVENUE AT PRESENT RATES			<u>\$103,104.1</u>
2007 INTERIM RATE INCREASE	7.05%		\$5,318.5
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			\$108,422.6

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE - Regular	192,348	30.00	\$5,770.4
3 PHASE - Regular	<u>122,976</u>	55.00	<u>\$6,763.7</u>
SUBTOTAL	315,324		\$12,534.1
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
G: Regular NON-DEMAND	<u>383,100</u>	16.4205	<u>\$62,906.9</u>
SUBTOTAL	383,100		\$62,906.9
<u>ADJUSTMENTS</u>		<u>Rate</u>	
FUEL OIL ADJUSTMENT:		7.221 ¢/KWH	\$27,663.7
MISCELLANEOUS **			<u>(\$0.6)</u>
SUBTOTAL			\$27,663.1
TOTAL REVENUE AT PRESENT RATES			\$103,104.1
2007 INTERIM RATE INCREASE		7.05%	\$5,318.5
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$108,422.6</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS

	<u>RECORDED</u>	<u>FORECASTED</u>
<u>TOTAL G:</u>		
SALES, MWH	374,761.5	383,100
NO. OF BILLS	298,989	315,324

DISTRIBUTION OF SALES AND BILLS BY PHASE

	<u>MWH SALES</u>		<u>NO. OF BILLS</u>	
<u>RECORDED:</u>	<u>SALES (MWH)</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>
1 PHASE	161,726.6	43.2	182,427	61.0
3 PHASE	<u>213,034.8</u>	<u>56.8</u>	<u>116,562</u>	<u>39.0</u>
TOTAL	374,761.5	100.0	298,989	100.0
<u>FORECAST:</u>	<u>PERCENT OF TOTAL</u>	<u>SALES (MWH)</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>
1 PHASE	43.2	165,499	61.0	192,348
3 PHASE	<u>56.8</u>	<u>217,601</u>	<u>39.0</u>	<u>122,976</u>
TOTAL	100.0	383,100	100.0	315,324

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR DISTRIBUTION PRIMARY (DP) SERVICE

AT PRESENT RATES

RECORDED      FORECAST

SALES, MWH

TOTAL G:	374,761	383,100
PRIMARY SVC.	146.671	149
% OF TOTAL	0.039%	

PRESENT RATES

<u>BILLING</u>		<u>UNIT PRICE</u>	<u>REVENUES</u>
<u>UNITS</u>		<u>CENTS/KWH</u>	<u>\$1000S</u>
<u>MWH</u>			

ENERGY CHARGE:	149	16.4205	\$24.5
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% ADJ.

DP ADJUSTMENT:		-2.1	(\$0.5)
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HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR DISTRIBUTION SECONDARY (DS) SERVICE

AT PRESENT RATES

RECORDED      FORECAST

SALES, MWH

TOTAL G:	374,761	383,100
PRIMARY SVC.	129.137	130
% OF TOTAL	0.034%	

PRESENT RATES

	<u>BILLING UNITS MWH</u>	<u>UNIT PRICE CENTS/KWH</u>	<u>REVENUES \$1000S</u>
ENERGY CHARGE:	130	16.4205	\$21.3
		<u>% ADJ.</u>	
DS ADJUSTMENT:		-0.6	(\$0.1)

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR MINIMUM CHARGE PROVISION

<u>1 PHASE</u>	<u>PRESENT RATES</u>
MINIMUM CHRG., \$/MO.	30.00
BASE RATE, \$/KWH	0.164205
F.O.A., \$/KWH	0.072210
CUSTOMER CHRG., \$/MO.	30.00
MINIMUM KWH/MONTH	0.00

<u>3 PHASE</u>	<u>PRESENT RATES</u>
MINIMUM CHRG., \$/MO.	55.00
BASE RATE, \$/KWH	0.164205
F.O.A., \$/KWH	0.072210
CUSTOMER CHRG., \$/MO.	55.00
MINIMUM KWH/MONTH	0.00

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR MINIMUM CHARGE PROVISION

	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL G	374,761.5	383,100
LT/EQ TO MIN. KWH		
1 PHASE	0.0	
3 PHASE	0.0	
TOTAL	-	-
% OF TOTAL	0.000	0.000
<u>NUMBER OF BILLS</u>		
TOTAL G	298,989	315,324
LT/EQ TO MIN. KWH		
1 PHASE	-	-
3 PHASE	-	-
TOTAL	-	-
% OF TOTAL	0.00	0.00



HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009 DIRECT TESTIMONY  
SCHEDULE G - GENERAL SERVICE NON-DEMAND

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR MINIMUM CHARGE PROVISION

PRESENT RATES

	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>MWH</u>	<u>\$/kWh</u>	
ENERGY CHARGE:	-	16.4205	\$0.0
FUEL OIL ADJUSTMENT	-	7.221	<u>\$0.0</u>
SUBTOTAL			\$0.0
	<u>BILLS</u>	<u>\$/MONTH</u>	
CUSTOMER CHARGE			
1 PHASE	-	30.00	\$0.0
3 PHASE	-	55.00	<u>\$0.0</u>
SUBTOTAL	-		<u>\$0.0</u>
Total Billed w/o Min Charge			<u>\$0.0</u>
	<u>BILLS</u>	<u>\$/MONTH</u>	
AS BILLED WITH MINIMUM CHARGE:			
1 PHASE	-	30.00	\$0.0
3 PHASE	-	55.00	<u>\$0.0</u>
Total Billed with Min Charge			<u>\$0.0</u>
MINIMUM BILL ADJUSTMENT			\$0.0

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Estimate of Test Year Revenues

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	1,244,060	13.5915	\$169,086.4
201 - 400 KWH/KW	686,282	12.4436	\$85,398.2
> 400 KWH/KW	155,758	11.4145	\$17,779.0
TOTAL	2,086,100		\$272,263.6
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
ALL BILLING KW	6,894,595	8.50	\$58,604.1
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	6,439	50.00	\$322.0
3 PHASE	74,045	70.00	\$5,183.2
SUBTOTAL	80,484		\$5,505.2
ADJUSTMENTS:			
POWER FACTOR ADJ.			(\$614.8)
TP VOLT. ADJ.			(\$88.1)
TS VOLT. ADJ.			(\$4.6)
DP VOLT. ADJ.			(\$688.8)
DS VOLT. ADJ.			(\$21.5)
NETWORK ADJ.			\$37.3
SUBTOTAL			(\$1,380.5)
UNADJUSTED BASE REVENUE			\$334,992.4
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M(B)			(\$179.5)
RIDER I			(\$56.0)
RIDER T			(\$491.0)
MULTIPLE RIDERS			(\$342.6)
SCHEDULE U			(\$24.5)
Total Rate Rider & Other Revenue Adjustments			(\$1,093.6)
Total Base Revenue			\$333,898.8
Fuel Oil Adjustment	¢/kWh	7.221	\$150,637.3
Rate Adjustment (AES Refund)	%	0.000%	\$0.0
TOTAL REVENUE AT PRESENT RATES			\$484,536.1
2007 INTERIM RATE INCREASE		5.96%	\$19,900.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			\$504,436.5

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Estimate of Test Year Revenues

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	1,244,060	13.5915	\$169,086.4
201 - 400 KWH/KW	686,282	12.4436	\$85,398.2
> 400 KWH/KW	155,758	11.4145	\$17,779.0
TOTAL	2,086,100		\$272,263.6
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
ALL BILLING KW	6,894,595	8.50	\$58,604.1
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	6,439	50.00	\$322.0
3 PHASE	74,045	70.00	\$5,183.2
SUBTOTAL	80,484		\$5,505.2
ADJUSTMENTS:			
MISCELLANEOUS **			(\$2,474.1)
Fuel Oil Adjustment	¢/kWh	7.221	\$150,637.3
Rate Adjustment (AES Refund)	%	0.000%	\$0.0
TOTAL REVENUE			\$484,536.1
2007 INTERIM RATE INCREASE REVENUES		5.96%	\$19,900.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			\$504,436.5

\*\* INCLUDES Service Voltage Adjustments, Power Factor Adjustment, Network Adjustment, and Rider Adjustments.

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of Billing Loads By Service Phase

	MWH SALES		NO. OF BILLS	
	SALES (MWH)	PERCENT OF TOTAL	NUMBER OF BILLS	PERCENT OF TOTAL
<u>RECORDED:</u>				
1 PHASE	56,416.6	2.74	6,453	8.00
3 PHASE	1,999,299.6	97.26	74,186	92.00
TOTAL	2,055,716.1	100.00	80,639	100.00
	PERCENT OF TOTAL	SALES (MWH)	PERCENT OF TOTAL	NUMBER OF BILLS
<u>FORECAST:</u>				
1 PHASE	2.74	57,159	8.00	6,439
3 PHASE	97.26	2,028,941	92.00	74,045
TOTAL	100.00	2,086,100	100.00	80,484

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of TY Billing Loads For TP Voltage Service

	AT PRESENT RATES	
	Recorded	Forecast
<u>Sales (MWH):</u>		
TOTAL SCHEDULE J:	2,055,716.1	2,086,100
TP Voltage Service	6,229.4	6,258
PERCENT OF TOTAL	0.30	
<u>Number Of Bills:</u>		
TOTAL SCHEDULE J:	80,639	80,484
TP Voltage Service	18	16
PERCENT OF TOTAL	0.02	

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of Billing Loads By Rate Block For TP Voltage Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	6,229.4	100.00	18	100.00
201 - 400 KWH/KW	-	0.00	-	0.00
> 400 KWH/KW	-	0.00	-	0.00
TOTAL	6,229.4	100.00	18	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	100.00	6,258	100.00	16
201 - 400 KWH/KW	0.00	0	0.00	-
> 400 KWH/KW	0.00	0	0.00	-
TOTAL	100.00	6,258	100.00	16

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of Billing Loads By Rate Block For TP Voltage Service

At Present Rates	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	244,404.0	25.49	245,508	245,508
201 - 400 KWH/KW	-	0.00	0	0
> 400 KWH/KW	0.0	0.00	0	0
TOTAL	244,404.0	25.49	245,508	245,508

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of Billing Loads By Rate Block For TP Voltage Service

	AT PRESENT RATES			
	LOAD FACTOR BLOCK (KWH/KW)			
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	6,258	0	0	6,258
201 - 400 KWH/KW	0	0	0	0
> 400 KWH/KW	0	0	0	0
TOTAL	6,258	0	0	6,258
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	6,258	0	0	6,258
BILLS	16	0	0	16
KW, BILLED	245,508	0	0	245,508



HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of TY Revenues For TP Voltage Service

	PRESENT RATES		
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	6,258	13.5915	\$850.6
201 - 400 KWH/KW	-	12.4436	\$0.0
> 400 KWH/KW	-	11.4145	\$0.0
TOTAL	6,258		\$850.6
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	245,508	8.50	\$2,086.8
TOTAL			<u>\$2,937.4</u>
		<u>% ADJ.</u>	
TP Voltage Adj		-3.0	(\$88.1)

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
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Determination of TY Billing Loads For TS Voltage Service

	AT PRESENT RATES	
	Recorded	Forecast
<u>Sales (MWH):</u>		
TOTAL SCHEDULE J:	2,055,716.1	2,086,100
TS Voltage Service	221.2	209
PERCENT OF TOTAL	0.01	
<u>Number Of Bills:</u>		
TOTAL SCHEDULE J:	80,639	80,484
TS Voltage Service	9	8
PERCENT OF TOTAL	0.01	

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Determination of Billing Loads By Rate Block For TS Voltage Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	121.0	54.70	8	88.89
201 - 400 KWH/KW	-	0.00	0	0.00
> 400 KWH/KW	100.2	45.30	1	11.11
TOTAL	221.2	100.00	9	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	54.70	114	88.89	7
201 - 400 KWH/KW	0.00	0	0.00	-
> 400 KWH/KW	45.30	95	11.11	1
TOTAL	100.00	209	100.00	8

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Determination of Billing Loads By Rate Block For TS Voltage Service

AT PRESENT RATES	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	20,733.5	5.84	19,521	19,521
201 - 400 KWH/KW	0.0	0.00		
> 400 KWH/KW	23.9	4,192.47	23	23
TOTAL	20,757.4	10.66	19,544	19,544

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Determination of Billing Loads By Rate Block For TS Voltage Service

	AT PRESENT RATES			
	LOAD FACTOR BLOCK (KWH/KW)			
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	114	0	5	119
201 - 400 KWH/KW	0	0	5	5
> 400 KWH/KW	0	0	85	85
TOTAL	114	0	95	209
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	114	0	95	209
BILLS	7	0	1	8
KW, BILLED	19,521	0	23	19,544

HAWAIIAN ELECTRIC COMPANY, INC.  
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Determination of TY Revenues For TS Voltage Service

	PRESENT RATES		
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	119	13.5915	\$16.2
201 - 400 KWH/KW	5	12.4436	\$0.6
> 400 KWH/KW	85	11.4145	\$9.7
TOTAL	209		\$26.5
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	19,544	8.50	\$166.1
TOTAL			<u>\$192.6</u>
		<u>% ADJ.</u>	
TS Voltage Adj		-2.4	(\$4.6)

HAWAIIAN ELECTRIC COMPANY, INC.  
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Determination of TY Billing Loads For Primary Voltage Service

	AT PRESENT RATES	
	Recorded	Forecast
<u>Sales (MWH):</u>		
TOTAL SCHEDULE J:	2,055,716.1	2,086,100
Primary Voltage Service	196,931.8	199,848
PERCENT OF TOTAL	9.58	
<u>Number Of Bills:</u>		
TOTAL SCHEDULE J:	80,639	80,484
Primary Voltage Service	1,567	1,561
PERCENT OF TOTAL	1.94	

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Determination of Billing Loads By Rate Block For Primary Voltage Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	34,522.2	17.53	249	15.89
201 - 400 KWH/KW	96,197.8	48.85	804	51.31
> 400 KWH/KW	66,211.8	33.62	514	32.80
TOTAL	196,931.8	100.00	1,567	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	17.53	35,033	15.89	248
201 - 400 KWH/KW	48.85	97,626	51.31	801
> 400 KWH/KW	33.62	67,189	32.80	512
TOTAL	100.00	199,848	100.00	1,561



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Determination of Billing Loads By Rate Block For Primary Voltage Service

	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	266,673.0	129.46	298,071	298,071
201 - 400 KWH/KW	327,952.4	293.33	346,533	346,533
> 400 KWH/KW	127,063.1	521.09	114,948	114,948
TOTAL	721,688.5	272.88	759,552	759,552

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Determination of Billing Loads By Rate Block For Primary Voltage Service

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	31,286.6	19.16	186	15.66
201 - 400 KWH/KW	82,210.6	50.33	630	53.03
> 400 KWH/KW	49,832.1	30.51	372	31.31
TOTAL	163,329.3	100.00	1,188	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	19.16	38,291	15.66	244
201 - 400 KWH/KW	50.33	100,583	53.03	828
> 400 KWH/KW	30.51	60,974	31.31	489
TOTAL	100.00	199,848	100.00	1,561

AT PROPOSED RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	34,864.2	21.35	204	17.17
201 - 400 KWH/KW	84,938.3	52.00	655	55.14
> 400 KWH/KW	43,526.8	26.65	329	27.70
TOTAL	163,329.3	100.00	1,188	100.00

FORECAST AT PROPOSED RATES:

	% OF TOTAL	MWH	% OF TOTAL	NO. OF BILLS
0 - 200 KWH/KW	21.35	42,668	17.17	268
201 - 400 KWH/KW	52.00	103,921	55.14	861
> 400 KWH/KW	26.65	53,259	27.70	432
TOTAL	100.00	199,848	100.00	1,561

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Determination of Billing Loads By Rate Block For Primary Voltage Service

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

AT PRESENT RATES	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	247,797.7	126.26	303,271	
201 - 400 KWH/KW	269,435.9	305.12	329,651	
> 400 KWH/KW	102,373.0	486.77	125,262	
TOTAL	619,606.6	263.60	758,184	
AT PROPOSED RATES	RECORDED		KW FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	272,949.1	127.73		334,048
201 - 400 KWH/KW	280,534.3	302.77		343,234
> 400 KWH/KW	91,264.2	476.93		111,670
TOTAL	644,747.6	253.32		788,952

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Determination of Billing Loads By Rate Block For Primary Voltage Service

	AT PRESENT RATES			
	LOAD FACTOR BLOCK (KWH/KW)			
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	42,668	69,307	22,990	134,965
201 - 400 KWH/KW	0	34,614	22,990	57,604
> 400 KWH/KW	0	0	7,279	7,279
TOTAL	42,668	103,921	53,259	199,848
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	42,668	103,921	53,259	199,848
BILLS	268	861	432	1,561
KW, BILLED	298,071	346,533	114,948	759,552

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Determination of TY Revenues For Primary Voltage Service

	PRESENT RATES		
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	134,965	13.5915	\$18,343.8
201 - 400 KWH/KW	57,604	12.4436	\$7,168.0
> 400 KWH/KW	7,279	11.4145	\$830.9
TOTAL	199,848		\$26,342.7
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	759,552	8.50	\$6,456.2
TOTAL			\$32,798.9
		<u>% ADJ.</u>	
DP Voltage Adjustment		-2.1	(\$688.8)

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Determination of TY Billing Loads For Primary Voltage,  
Secondary Metering Service

	AT PRESENT RATES	
	RECORDED	FORECAST
<u>SALES, MWH:</u>		
TOTAL J:	2,055,716.1	2,086,100
Secondary Metering Adj.	22,779.0	23,156
PERCENT OF TOTAL	1.11	
<u>NUMBER OF BILLS:</u>		
TOTAL J:	80,639	80,484
Secondary Metering Adj.	305	306
PERCENT OF TOTAL	0.38	

HAWAIIAN ELECTRIC COMPANY, INC.  
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Billing Loads By Rate Block For Primary Voltage, Secondary Metering Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	259.6	1.14	25	8.20
201 - 400 KWH/KW	10,827.7	47.53	152	49.84
> 400 KWH/KW	11,691.7	51.33	128	41.97
TOTAL	22,779.0	100.00	305	100.01

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	1.14	264	8.20	25
201 - 400 KWH/KW	47.53	11,006	49.84	153
> 400 KWH/KW	51.33	11,886	41.97	128
TOTAL	100.00	23,156	100.01	306

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Determination of Billing Loads By Rate Block For Secondary Voltage Service

	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	5,757.2	45.09	7,547	7,547
201 - 400 KWH/KW	35,087.9	308.59	36,770	36,770
> 400 KWH/KW	21,575.6	541.89	20,378	20,378
TOTAL	62,420.7	364.93	64,695	64,695



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Determination of Billing Loads By Rate Block For Primary Voltage, Secondary Metering Service

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	1,141.4	6.90	12	5.88
201 - 400 KWH/KW	9,410.7	56.89	124	60.78
> 400 KWH/KW	5,990.9	36.21	68	33.34
TOTAL	16,543.0	100.00	204	100.00

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	6.90	1,598	5.88	18
201 - 400 KWH/KW	56.89	13,173	60.78	186
> 400 KWH/KW	36.21	8,385	33.34	102
TOTAL	100.00	23,156	100.00	306

AT PROPOSED RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	1,487.1	8.99	18	8.83
201 - 400 KWH/KW	9,612.2	58.10	124	60.78
> 400 KWH/KW	5,443.7	32.91	62	30.39
TOTAL	16,543.0	100.00	204	100.00

FORECAST AT PROPOSED RATES:

	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	8.99	2,081	8.83	27
201 - 400 KWH/KW	58.10	13,454	60.78	186
> 400 KWH/KW	32.91	7,621	30.39	93
TOTAL	100.00	23,156	100.00	306

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Determination of Billing Loads By Rate Block For Secondary Voltage Service

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

At PRESENT RATES	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	6,703.9	170.26	9,386	
201 - 400 KWH/KW	29,767.8	316.14	41,668	
> 400 KWH/KW	11,345.7	528.03	15,880	
TOTAL	47,817.4	345.96	66,934	

At PROPOSED RATES	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	8,645.4	172.01		12,098
201 - 400 KWH/KW	30,691.3	313.19		42,958
> 400 KWH/KW	10,538.0	516.58		14,753
TOTAL	49,874.7	331.69		69,809

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Determination of Billing Loads By Rate Block For Primary Voltage, Secondary Metering Service

	PRESENT RATES			
	LOAD FACTOR BLOCK (KWH/KW)			
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	1,509	7,354	4,076	12,939
201 - 400 KWH/KW	572	6,100	3,545	10,217
> 400 KWH/KW	0	0	0	0
TOTAL	2,081	13,454	7,621	23,156

FORECAST AT PRESENT RATES:

SALES-MWH	2,081	13,454	7,621	23,156
BILLS	27	186	93	306
KW, BILLED	7,547	36,770	20,378	64,695

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Determination of TY Revenues For Primary Voltage,  
Secondary Metering Service

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	12,939	13.5915	\$1,758.6
201 - 400 KWH/KW	10,217	12.4436	\$1,271.4
> 400 KWH/KW	0	11.4145	\$0.0
TOTAL	23,156		\$3,030.0
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/KW</u>	
	64,695	8.50	\$549.9
Energy & Demand			<u>\$3,579.9</u>
		<u>% Adj.</u>	
DS Voltage Adjustment		(0.6)	(\$21.5)

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Determination of TY Billing Loads For Network Service

	AT PRESENT RATES	
	RECORDED	FORECAST
<u>SALES, MWH:</u>		
TOTAL J:	2,055,716.1	2,086,100
Network Service	26,202.0	26,493
PERCENT OF TOTAL	1.27	
<u>NUMBER OF BILLS:</u>		
TOTAL J:	80,639	80,484
Network Service	285	282
PERCENT OF TOTAL	0.35	

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Determination of Billing Loads By Rate Block For Network Service

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	209.0	0.80	17	5.96
201 - 400 KWH/KW	22,364.0	85.35	220	77.19
> 400 KWH/KW	3,629.0	13.85	48	16.84
TOTAL	26,202.0	100.00	285	99.99

FORECAST AT PRESENT RATES:

	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	0.80	212	5.96	17
201 - 400 KWH/KW	85.35	22,612	77.19	218
> 400 KWH/KW	13.85	3,669	16.84	47
TOTAL	100.00	26,493	99.99	282

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Determination of Billing Loads By Rate Block For Network Service

At PRESENT RATES	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	1,857.4	112.52	1,884	1,884
201 - 400 KWH/KW	67,894.0	329.40	68,646	68,646
> 400 KWH/KW	8,551.4	424.37	8,646	8,646
TOTAL	78,302.8	334.62	79,176	79,176

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Determination of Billing Loads By Rate Block For Network Service

	PRESENT RATES			
	LOAD FACTOR BLOCK (KWH/KW)			
	0 - 200	201 - 400	> 400	TOTAL
<u>LOAD FACTOR BLOCK:</u>				
0 - 200 KWH/KW	212	13,729	1,729	15,670
201 - 400 KWH/KW	0	8,883	1,729	10,612
> 400 KWH/KW	0	0	211	211
TOTAL	212	22,612	3,669	26,493
<u>FORECAST AT PRESENT RATES:</u>				
SALES-MWH	212	22,612	3,669	26,493
BILLS	17	218	47	282
KW, BILLED	1,884	68,646	8,646	79,176



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Determination of TY Revenues For Network Service

	PRESENT RATES		
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	15,670	13.5915	2,129.8
201 - 400 KWH/KW	10,612	12.4436	1,320.5
> 400 KWH/KW	211	11.4145	24.1
TOTAL	26,493		3,474.4
	<u>kW</u>	<u>\$/kW</u>	
<u>DEMAND CHARGE:</u>	79,176	8.50	673.0
Energy & Demand			4,147.4
		<u>% Adj.</u>	
Network Service Adj		0.9	\$37.3

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Determination of Billing Loads By Rate Block For Total J

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	156,389.5	7.61	13,117.0	16.27
201 - 400 KWH/KW	959,228.8	46.66	46,851.0	58.10
> 400 KWH/KW	940,097.8	45.73	20,671.0	25.63
TOTAL	2,055,716.1	100.00	80,639	100.00
<u>FORECAST:</u>				
	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	7.61	158,752	16.27	13,095
201 - 200 KWH/KW	46.66	973,374	58.10	46,761
> 400 KWH/KW	45.73	953,974	25.63	20,628
TOTAL	100.00	2,086,100	100.00	80,484

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Determination of Billing Loads By Rate Block For Total J

<u>LOAD FACTOR BLOCKS:</u>	<u>RECORDED</u>		<u>FORECAST</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>PRESENT</u>	<u>PROPOSED</u>
0 - 200 KWH/KW	1,415,917.1	110.45	1,628,683	1,628,683
201 - 400 KWH/KW	3,224,621.7	297.47	3,473,247	3,473,247
> 400 KWH/KW	1,892,399.6	496.78	1,792,665	1,792,665
TOTAL	6,532,938.4	314.67	6,894,595	6,894,595

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Determination of Billing Loads By Rate Block For Total J

<u>LOAD FACTOR BLOCK:</u>	<u>PRESENT RATES</u>			
	<u>LOAD FACTOR BLOCK (KWH/KW)</u>			
	<u>0 - 200</u>	<u>201 - 400</u>	<u>&gt; 400</u>	<u>TOTAL</u>
0 - 200 KWH/KW	190,878	694,649	358,533	1,244,060
201 - 400 KWH/KW	0	327,749	358,533	686,282
> 400 KWH/KW	0	0	155,758	155,758
TOTAL	190,878	1,022,398	872,824	2,086,100

FORECAST AT PRESENT RATES:

SALES - MWH	190,878	1,022,398	872,824	2,086,100
BILLS	13,103	47,421	19,960	80,484
KW, BILLED	1,628,683	3,473,247	1,792,665	6,894,595

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Determination of Billing Loads By Rate Block For Total J

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	129,504.4	7.99	8,797	14.62
201 - 400 KWH/KW	752,043.9	46.37	34,768	57.80
> 400 KWH/KW	740,146.8	45.64	16,591	27.58
TOTAL	1,621,695.1	100.00	60,156	100.00

<u>FORECAST:</u>	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	7.99	166,679	14.62	11,767
201 - 200 KWH/KW	46.37	967,325	57.80	46,520
> 400 KWH/KW	45.64	952,096	27.58	22,197
TOTAL	100.00	2,086,100	100.00	80,484

AT PROPOSED RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	148,415.9	9.15	9,794	16.28
201 - 400 KWH/KW	794,814.6	49.01	35,446	58.92
> 400 KWH/KW	678,464.7	41.84	14,916	24.80
TOTAL	1,621,695.1	100.00	60,156	100.00

<u>FORECAST:</u>	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	9.15	190,878	16.28	13,103
201 - 200 KWH/KW	49.01	1,022,398	58.92	47,421
> 400 KWH/KW	41.84	872,824	24.80	19,960
TOTAL	100.00	2,086,100	100.00	80,484

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of Billing Loads By Rate Block For Total J

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

AT PRESENT RATES	RECORDED		FORECAST	
<u>LOAD FACTOR BLOCKS:</u>	<u>KW</u>	<u>KWH/KW</u>	<u>PRESENT</u>	<u>PROPOSED</u>
0 - 200 KWH/KW	949,398.4	136.41	1,221,897	
201 - 400 KWH/KW	2,519,163.3	298.53	3,240,294	
> 400 KWH/KW	1,495,490.5	494.92	1,923,737	
TOTAL	4,964,052.2	326.69	6,385,928	

AT PROPOSED RATES	RECORDED		FORECAST	
<u>LOAD FACTOR BLOCKS:</u>	<u>KW</u>	<u>KWH/KW</u>	<u>PRESENT</u>	<u>PROPOSED</u>
0 - 200 KWH/KW	1,076,550.4	137.86		1,384,579
201 - 400 KWH/KW	2,673,772.4	297.26		3,439,407
> 400 KWH/KW	1,395,967.2	486.02		1,795,860
TOTAL	5,146,290.0	315.12		6,619,846

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-0083, Test-Year 2009  
Schedule J - General Service Demand

Determination of Billing Loads By Rate Block For kWm > 200

AT PRESENT RATES		SALES		NUMBER OF BILLS	
RECORDED:	MWH	% OF TOTAL	BILLS	% OF TOTAL	
0 - 200 KWH/KW	61,767.7	8.13	632	10.91	
201 - 400 KWH/KW	360,293.0	47.45	2,931	50.60	
> 400 KWH/KW	337,278.4	44.42	2,230	38.49	
TOTAL	759,339.1	100.00	5,793	100.00	
FORECAST:	% OF TOTAL	MWH	% OF TOTAL	BILLS	
0 - 200 KWH/KW	8.13	62,647	10.91	631	
201 - 200 KWH/KW	47.45	365,632	50.60	2,926	
> 400 KWH/KW	44.42	342,283	38.49	2,225	
TOTAL	100.00	770,562	100.00	5,782	

AT PROPOSED RATES  
Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

		SALES		NUMBER OF BILLS	
RECORDED:	MWH	% OF TOTAL	BILLS	% OF TOTAL	
0 - 200 KWH/KW	62,180.8	10.66	650	14.19	
201 - 400 KWH/KW	296,821.5	50.91	2,388	52.13	
> 400 KWH/KW	224,077.3	38.43	1,543	33.68	
TOTAL	583,079.6	100.00	4,581	100.00	
FORECAST:	% OF TOTAL	MWH	% OF TOTAL	BILLS	
0 - 200 KWH/KW	10.66	82,142	14.19	820	
201 - 200 KWH/KW	50.91	392,293	52.13	3,014	
> 400 KWH/KW	38.43	296,127	33.68	1,948	
TOTAL	100.00	770,562	100.00	5,782	

		RECORDED		FORECAST	
LOAD FACTOR BLOCKS:	KW	KWH/KW	PRESENT	PROPOSED	
0 - 200 KWH/KW	684,956.2	90.18	739,777	739,777	
201 - 400 KWH/KW	1,190,525.2	302.63	1,272,536	1,272,536	
> 400 KWH/KW	638,981.8	527.84	613,993	613,993	
TOTAL	2,514,463.2	301.99	2,626,306	2,626,306	

AT PRESENT RATES		LOAD FACTOR BLOCK (KWH/KW)		
LOAD FACTOR BLOCK:	0 - 200	201 - 400	> 400	TOTAL
0 - 200 KWH/KW	82,142	254,507	122,799	459,448
201 - 400 KWH/KW	0	137,786	122,799	260,585
> 400 KWH/KW	0	0	50,529	50,529
TOTAL	82,142	392,293	296,127	770,562

AT PROPOSED RATES		LOAD FACTOR BLOCK (KWH/KW)		
LOAD FACTOR BLOCK:	0 - 200	201 - 400	> 400	TOTAL
0 - 200 KWH/KW	82,142	254,507	122,799	459,448
201 - 400 KWH/KW	0	137,786	122,799	260,585
> 400 KWH/KW	0	0	50,529	50,529
TOTAL	82,142	392,293	296,127	770,562

HAWAIIAN ELECTRIC COMPANY, INC.  
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Determination of Billing Loads By Rate Block For kWm > 200

Using Sch J Extract Data - 75% Ratchet at Present; Average Ratchet at Proposed

AT PRESENT RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	58,167.1	9.74	692	14.32
201 - 400 KWH/KW	291,577.1	48.83	2,418	50.02
> 400 KWH/KW	247,325.1	41.43	1,724	35.66
TOTAL	597,069.3	100.00	4,834	100.00
<u>FORECAST:</u>				
	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	9.74	59,014	14.32	691
201 - 200 KWH/KW	48.83	295,858	50.02	2,413
> 400 KWH/KW	41.43	251,022	35.66	1,721
TOTAL	100.00	605,894	100.00	4,825
AT PROPOSED RATES	SALES		NUMBER OF BILLS	
	MWH	% OF TOTAL	BILLS	% OF TOTAL
<u>RECORDED:</u>				
0 - 200 KWH/KW	62,180.8	10.66	650	14.19
201 - 400 KWH/KW	296,821.5	50.91	2,388	52.13
> 400 KWH/KW	224,077.3	38.43	1,543	33.68
TOTAL	583,079.6	100.00	4,581	100.00
<u>FORECAST:</u>				
	% OF TOTAL	MWH	% OF TOTAL	BILLS
0 - 200 KWH/KW	10.66	64,588	14.19	685
201 - 200 KWH/KW	50.91	308,461	52.13	2,515
> 400 KWH/KW	38.43	232,845	33.68	1,625
TOTAL	100.00	605,894	100.00	4,825
AT PRESENT RATES	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	453,348.3	128.31	459,933	
201 - 400 KWH/KW	958,806.5	304.10	972,897	
> 400 KWH/KW	495,665.7	498.98	503,070	
TOTAL	1,907,820.5	312.96	1,935,900	
AT PROPOSED RATES	RECORDED		FORECAST	
	KW	KWH/KW	PRESENT	PROPOSED
<u>LOAD FACTOR BLOCKS:</u>				
0 - 200 KWH/KW	471,537.2	131.87		489,785
201 - 400 KWH/KW	986,056.8	301.02		1,024,719
> 400 KWH/KW	458,391.9	488.83		476,331
TOTAL	1,915,985.9	304.32		1,990,835



HAWAIIAN ELECTRIC COMPANY, INC.  
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Revenues for Power Factor Adjustment for Billing Loads By  
Rate Block For kWm > 200

PRESENT RATES			
	BILLING UNITS	UNIT PRICE	REVENUES \$000s
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	459,448	13.5915	\$62,445.9
201 - 400 KWH/KW	260,585	12.4436	\$32,426.2
> 400 KWH/KW	50,529	11.4145	\$5,767.6
TOTAL	770,562		\$100,639.7
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
ALL BILLING KW	2,626,306	8.50	\$22,323.6
Total Demand and Energy			\$122,963.3

HAWAIIAN ELECTRIC COMPANY, INC.  
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Estimate of PF Adjustment for kWm > 200 kW Customers

	Recorded
SALES (KWH)	759,339,135
KVARHR	369,539,900
POWER FACTOR (%)	90.0
FOR kWM > 200kW	<u>AT PRESENT RATES</u>
CALCULATED PF (%)	90.0
BASE PF (%)	85.0
DIFF.	<u>(5.0)</u>
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJ RATE	-0.005
TOTAL DMD + ENGY CHRG	\$122,963.3
Power Factor Adjustment (\$000s)	(\$614.8)

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE J - General Service Demand  
Docket No. 2008-0083, Test-Year 2009

SUMMARY OF TEST-YEAR REVENUES ADJUSTMENTS  
FOR RIDER SERVICE AT PRESENT RATES

<u>RIDER M(B)</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider Mb J1	(\$16.1)
Rider Mb J2	(\$11.1)
Rider Mb J3	(\$12.6)
Rider Mb J4	\$0.1
Rider Mb J5	(\$5.5)
Rider Mb J6	(\$5.0)
Rider Mb J7	(\$25.3)
Rider Mb J8	(\$4.3)
Rider Mb J9	(\$9.9)
Rider Mb J10	(\$26.5)
Rider Mb J11	(\$34.1)
Rider Mb J12	(\$17.0)
Rider Mb J13	(\$12.2)

Total Rider Mb (\$179.5)

<u>RIDER I</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider I J1	(\$56.0)

Total Rider I (\$56.0)

<u>RIDER T</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider T J1	(\$0.9)
Rider T J2	(\$2.1)
Rider T J3	(\$18.2)
Rider T J4	(\$6.0)
Rider T J5	(\$6.7)
Rider T J6	\$0.1
Rider T J7	(\$13.3)
Rider T J8	(\$2.0)
Rider T J9	(\$3.1)
Rider T J10	(\$0.9)
Rider T J11	\$0.0
Rider T J12	(\$1.9)
Rider T J13	(\$6.4)
Rider T J14	(\$11.4)
Rider T J15	(\$40.1)
Rider T J16	(\$37.1)
Rider T J17	(\$27.3)
Rider T J18	(\$30.3)
Rider T J19	(\$54.3)
Rider T J20	(\$1.1)
Rider T J21	(\$1.9)
Rider T J22	(\$1.2)
Rider T J23	(\$44.3)
Rider T J24	(\$48.4)
Rider T J25	(\$117.7)
Rider T J26	(\$14.5)

TOTAL (\$491.0)

<u>MULTIPLE RIDERS</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider Mbl J1	(\$342.6)
TOTAL	(\$342.6)

<u>SCHEDULE U</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Sch U J1	(\$24.5)
TOTAL	(\$24.5)

Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
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Rider Mb J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		154.3		
Billing kW	452.4	336.7		
kWh Per Month	144,540.0	144,540		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	86	86		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	90,480	67,340	\$12,298	\$9,153
201 - 400 kWh/kW	54,060	67,340	\$6,727	\$8,380
>400 kWh/kW	0	9,860	\$0	\$1,125
Subtotal	144,540	144,540	\$19,025	\$18,658
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	452.4	336.7	\$3,845	\$2,862
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$23)	(\$22)
Total Base Revenue Per Month			\$22,917	\$21,578
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$22,917	\$21,578
Total Revenue Per Year (\$000s)			\$275.0	\$258.9
Rider Adjustment (\$000s/Yr)				(\$16.1)

Hawaiian Electric Company, Inc.  
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Rider Mb J2

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		104.8		
Billing kW	126.9	48.3		
kWh Per Month	28,287.0	28,287		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	25,380	9,660	\$3,450	\$1,313
201 - 400 kWh/kW	2,907	9,660	\$362	\$1,202
>400 kWh/kW	0	8,967	\$0	\$1,024
Subtotal	28,287	28,287	\$3,812	\$3,539
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	126.9	48.3	\$1,079	\$411
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$4,961	\$4,030
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,961	\$4,030
Total Revenue Per Year (\$000s)			\$59.5	\$48.4
Rider Adjustment (\$000s/Yr)				(\$11.1)

Hawaiian Electric Company, Inc.  
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Rider Mb J3

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		114.5		
Billing kW	163.8	77.9		
kWh Per Month	45,793.0	45,793		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	32,760	15,580	\$4,453	\$2,118
201 - 400 kWh/kW	13,033	15,580	\$1,622	\$1,939
>400 kWh/kW	0	14,633	\$0	\$1,670
Subtotal	45,793	45,793	\$6,075	\$5,727
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	163.8	77.9	\$1,392	\$662
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$157)	(\$134)
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$7,380	\$6,335
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$7,380	\$6,335
Total Revenue Per Year (\$000s)			\$88.6	\$76.0
Rider Adjustment (\$000s/Yr)				(\$12.6)

Hawaiian Electric Company, Inc.  
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Rider Mb J4

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		0.1		
Billing kW	188.5	188.4		
kWh Per Month	33,620.0	33,620		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	33,620	33,620	\$4,569	\$4,569
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	33,620	33,620	\$4,569	\$4,569
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	188.5	188.4	\$1,602	\$1,601
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$130)	(\$130)
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$6,111	\$6,120
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$6,111	\$6,120
Total Revenue Per Year (\$000s)			\$73.3	\$73.4
Rider Adjustment (\$000s/Yr)				\$0.1

Hawaiian Electric Company, Inc.  
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Rider Mb J5

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		57.8		
Billing kW	136.7	93.3		
kWh Per Month	27,667.0	27,667		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	27,340	18,660	\$3,716	\$2,536
201 - 400 kWh/kW	327	9,007	\$41	\$1,121
>400 kWh/kW	0	0	\$0	\$0
Subtotal	27,667	27,667	\$3,757	\$3,657
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	136.7	93.3	\$1,162	\$793
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$4,989	\$4,530
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,989	\$4,530
Total Revenue Per Year (\$000s)			\$59.9	\$54.4
Rider Adjustment (\$000s/Yr)				(\$5.5)



Hawaiian Electric Company, Inc.  
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Rider Mb J6

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		52.2		
Billing kW	141.6	102.4		
kWh Per Month	28,327.0	28,327		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	28,320	20,480	\$3,849	\$2,784
201 - 400 kWh/kW	7	7,847	\$1	\$976
>400 kWh/kW	0	0	\$0	\$0
Subtotal	28,327	28,327	\$3,850	\$3,760
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	141.6	102.4	\$1,204	\$870
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$5,124	\$4,710
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,124	\$4,710
Total Revenue Per Year (\$000s)			\$61.5	\$56.5
Rider Adjustment (\$000s/Yr)				(\$5.0)

Hawaiian Electric Company, Inc.  
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Rider Mb J7

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J4	Rider M(b)
Billing Load Per Month:				
Curtailable Load		215.2		
Billing kW	526.7	365.3		
kWh Per Month	184,050.0	184,050		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	105,340	73,060	\$14,317	\$9,930
201 - 400 kWh/kW	78,710	73,060	\$9,794	\$9,091
>400 kWh/kW	0	37,930	\$0	\$4,330
Subtotal	184,050	184,050	\$24,111	\$23,351
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	526.7	365.3	\$4,477	\$3,105
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$172)	(\$159)
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$28,486	\$26,377
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$28,486	\$26,377
Total Revenue Per Year (\$000s)			\$341.8	\$316.5
Rider Adjustment (\$000s/Yr)				(\$25.3)

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Rider Mb J8

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		44.5		
Billing kW	206.5	173.1		
kWh Per Month	44,360.0	44,360		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	67	67		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	41,300	34,620	\$5,613	\$4,705
201 - 400 kWh/kW	3,060	9,740	\$381	\$1,212
>400 kWh/kW	0	0	\$0	\$0
Subtotal	44,360	44,360	\$5,994	\$5,917
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	206.5	173.1	\$1,755	\$1,471
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$139	\$133
Total Base Revenue Per Month			\$7,958	\$7,601
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$7,958	\$7,601
Total Revenue Per Year (\$000s)			\$95.5	\$91.2
Rider Adjustment (\$000s/Yr)				(\$4.3)

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Rider Mb J9

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		104.3		
Billing kW	200.5	122.3		
kWh Per Month	45,787.0	45,787		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	92	92		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	40,100	24,460	\$5,450	\$3,324
201 - 400 kWh/kW	5,687	21,327	\$708	\$2,654
>400 kWh/kW	0	0	\$0	\$0
Subtotal	45,787	45,787	\$6,158	\$5,978
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	200.5	122.3	\$1,704	\$1,040
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$55)	(\$49)
Total Base Revenue Per Month			\$7,877	\$7,049
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$7,877	\$7,049
Total Revenue Per Year (\$000s)			\$94.5	\$84.6
Rider Adjustment (\$000s/Yr)				(\$9.9)

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Rider Mb J10

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		262.0		
Billing kW	428.0	231.5		
kWh Per Month	98,917.0	98,917		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	68	68		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	85,600	46,300	\$11,634	\$6,293
201 - 400 kWh/kW	13,317	46,300	\$1,657	\$5,761
>400 kWh/kW	0	6,317	\$0	\$721
Subtotal	98,917	98,917	\$13,291	\$12,775
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	428.0	231.5	\$3,638	\$1,968
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$288	\$251
Total Base Revenue Per Month			\$17,287	\$15,074
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$17,287	\$15,074
Total Revenue Per Year (\$000s)			\$207.4	\$180.9
Rider Adjustment (\$000s/Yr)				(\$26.5)

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Rider Mb J11

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		368.8		
Billing kW	370.4	93.8		
kWh Per Month	52,300.0	52,300		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	98	98		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	52,300	18,760	\$7,108	\$2,550
201 - 400 kWh/kW	0	18,760	\$0	\$2,334
>400 kWh/kW	0	14,780	\$0	\$1,687
Subtotal	52,300	52,300	\$7,108	\$6,571
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	370.4	93.8	\$3,148	\$797
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$133)	(\$96)
Total Base Revenue Per Month			\$10,193	\$7,352
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$10,193	\$7,352
Total Revenue Per Year (\$000s)			\$122.3	\$88.2
Rider Adjustment (\$000s/Yr)				(\$34.1)

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Rider Mb J12

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		178.8		
Billing kW	310.8	176.7		
kWh Per Month	68,400.0	68,400		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	100	100		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	62,160	35,340	\$8,448	\$4,803
201 - 400 kWh/kW	6,240	33,060	\$776	\$4,114
>400 kWh/kW	0	0	\$0	\$0
Subtotal	68,400	68,400	\$9,224	\$8,917
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	310.8	176.7	\$2,642	\$1,502
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$178)	(\$156)
Total Base Revenue Per Month			\$11,758	\$10,343
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$11,758	\$10,343
Total Revenue Per Year (\$000s)			\$141.1	\$124.1
Rider Adjustment (\$000s/Yr)				(\$17.0)

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Rider Mb J13

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J4	Rider M(b)	Sch. J	Rider M(b)
Billing Load Per Month:				
Curtailable Load		118.7		
Billing kW	427.9	338.9		
kWh Per Month	143,433.0	143,433		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	99	99		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	85,580	67,780	\$11,632	\$9,212
201 - 400 kWh/kW	57,853	67,780	\$7,199	\$8,434
>400 kWh/kW	0	7,873	\$0	\$899
Subtotal	143,433	143,433	\$18,831	\$18,545
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	427.9	338.9	\$3,637	\$2,881
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$315)	(\$300)
Total Base Revenue Per Month			\$22,223	\$21,206
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$22,223	\$21,206
Total Revenue Per Year (\$000s)			\$266.7	\$254.5
Rider Adjustment (\$000s/Yr)				(\$12.2)



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Rider I J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Rider I	Sch. J3	Rider I
Billing Load Per Month:				
Curtailable Load		0.0		
Billing kW	1,905.7	1,337.8		
kWh Per Month	211,400	211,400		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	96	96		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	211,400	211,400	\$28,732	\$28,732
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	211,400	211,400	\$28,732	\$28,732
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	1,905.7	1,337.8	\$16,198	\$11,371
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				
Primary Voltage Service Discount			(\$944)	(\$842)
Power Factor Adjustment			(\$494)	(\$441)
Total Base Revenue Per Month			\$43,562	\$38,890
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$43,562	\$38,890
Total Revenue Per Year (\$000s)			\$522.7	\$466.7
Rider Adjustment (\$000s/Yr)				(\$56.0)

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Rider T J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J3	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	40.2	37.9		
kWh Per Month	2,573	2,573		
On-Peak kWh		333.0		
Off-Peak kWh		2,240		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	2,573	2,573	\$350	\$350
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	2,573	2,573	\$350	\$350
On-Peak Surcharge		333		\$7
Off-Peak Credit		2,240		(\$67)
Rider T Energy Charge Adjustment		2,573		(\$60)
<u>Demand Charge:</u>				
Total kWb	40.2	37.9	\$342	\$322
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$15)	(\$14)
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$747	\$678
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$747	\$678
Total Revenue Per Year (\$000s)			\$9.0	\$8.1
Rider Adjustment (\$000s/Yr)				(\$0.9)

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Rider T J2

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	116.7	116.7		
kWh Per Month	36,080	36,080		
On-Peak kWh		17,880.0		
Off-Peak kWh		18,200		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	23,340	23,340	\$3,172	\$3,172
201 - 400 kWh/kW	12,740	12,740	\$1,585	\$1,585
>400 kWh/kW	0	0	\$0	\$0
Subtotal	36,080	36,080	\$4,757	\$4,757
On-Peak Surcharge		17,880		\$358
Off-Peak Credit		18,200		(\$546)
Rider T Energy Charge Adjustment		36,080		(\$188)
<u>Demand Charge:</u>				
Total kWb	116.7	116.7	\$992	\$992
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$5,819	\$5,641
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,819	\$5,641
Total Revenue Per Year (\$000s)			\$69.8	\$67.7
Rider Adjustment (\$000s/Yr)				(\$2.1)

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Rider T J3

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	339.4	291.0		
kWh Per Month	78,020	78,020		
On-Peak kWh		26,607.0		
Off-Peak kWh		51,413		
Power Factor	88	88		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	67,880	58,200	\$9,226	\$7,910
201 - 400 kWh/kW	10,140	19,820	\$1,262	\$2,466
>400 kWh/kW	0	0	\$0	\$0
Subtotal	78,020	78,020	\$10,488	\$10,376
On-Peak Surcharge		26,607		\$532
Off-Peak Credit		51,413		(\$1,542)
Rider T Energy Charge Adjustment		78,020		(\$1,010)
<u>Demand Charge:</u>				
Total kWb	339.4	291.0	\$2,885	\$2,474
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$40)	(\$39)
Total Base Revenue Per Month			\$13,403	\$11,881
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$13,403	\$11,881
Total Revenue Per Year (\$000s)			\$160.8	\$142.6
Rider Adjustment (\$000s/Yr)				(\$18.2)

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Rider T J4

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	401.1	381.8		
kWh Per Month	113,900	113,900		
On-Peak kWh		62,160.0		
Off-Peak kWh		51,740		
Power Factor	86	86		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	80,220	76,360	\$10,903	\$10,378
201 - 400 kWh/kW	33,680	37,540	\$4,191	\$4,671
>400 kWh/kW	0	0	\$0	\$0
Subtotal	113,900	113,900	\$15,094	\$15,049
On-Peak Surcharge		62,160		\$1,243
Off-Peak Credit		51,740		(\$1,552)
Rider T Energy Charge Adjustment		113,900		(\$309)
<u>Demand Charge:</u>				
Total kWb	401.1	381.8	\$3,409	\$3,245
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$19)	(\$18)
Total Base Revenue Per Month			\$18,554	\$18,047
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$18,554	\$18,047
Total Revenue Per Year (\$000s)			\$222.6	\$216.6
Rider Adjustment (\$000s/Yr)				(\$6.0)

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Rider T J5

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	212.9	190.6		
kWh Per Month	33,160	33,160		
On-Peak kWh		12,213.0		
Off-Peak kWh		20,947		
Power Factor	88	88		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	33,160	33,160	\$4,507	\$4,507
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	33,160	33,160	\$4,507	\$4,507
On-Peak Surcharge		12,213		\$244
Off-Peak Credit		20,947		(\$628)
Rider T Energy Charge Adjustment		33,160		(\$384)
<u>Demand Charge:</u>				
Total kWb	212.9	190.6	\$1,810	\$1,620
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$19)	(\$18)
Total Base Revenue Per Month			\$6,368	\$5,805
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$6,368	\$5,805
Total Revenue Per Year (\$000s)			\$76.4	\$69.7
Rider Adjustment (\$000s/Yr)				(\$6.7)

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Rider T J6

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	25.0	25.0		
kWh Per Month	0	0		
On-Peak kWh		0.0		
Off-Peak kWh		0		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	0	0	\$0	\$0
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	0	0	\$0	\$0
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	25.0	25.0	\$213	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$283	\$293
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$283	\$293
Total Revenue Per Year (\$000s)			\$3.4	\$3.5
Rider Adjustment (\$000s/Yr)				\$0.1

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Rider T J7

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	391.4	259.5		
kWh Per Month	667	667		
On-Peak kWh		400.0		
Off-Peak kWh		267		
Power Factor	90	90		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	667	667	\$91	\$91
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	667	667	\$91	\$91
On-Peak Surcharge		400		\$8
Off-Peak Credit		267		(\$8)
Rider T Energy Charge Adjustment		667		\$0
<u>Demand Charge:</u>				
Total kWb	391.4	259.5	\$3,327	\$2,206
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$17)	(\$11)
Total Base Revenue Per Month			\$3,471	\$2,366
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,471	\$2,366
Total Revenue Per Year (\$000s)			\$41.7	\$28.4
Rider Adjustment (\$000s/Yr)				(\$13.3)



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Rider T J8

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	115.6	114.7		
kWh Per Month	23,200	23,200		
On-Peak kWh		10,707.0		
Off-Peak kWh		12,493		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	23,120	22,940	\$3,142	\$3,118
201 - 400 kWh/kW	80	260	\$10	\$32
>400 kWh/kW	0	0	\$0	\$0
Subtotal	23,200	23,200	\$3,152	\$3,150
On-Peak Surcharge		10,707		\$214
Off-Peak Credit		12,493		(\$375)
Rider T Energy Charge Adjustment		23,200		(\$161)
<u>Demand Charge:</u>				
Total kWb	115.6	114.7	\$983	\$975
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$4,205	\$4,044
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,205	\$4,044
Total Revenue Per Year (\$000s)			\$50.5	\$48.5
Rider Adjustment (\$000s/Yr)				(\$2.0)

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Rider T J9

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	195.2	194.0		
kWh Per Month	20,833	20,833		
On-Peak kWh		7,213.0		
Off-Peak kWh		13,620		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	20,833	20,833	\$2,832	\$2,832
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	20,833	20,833	\$2,832	\$2,832
On-Peak Surcharge		7,213		\$144
Off-Peak Credit		13,620		(\$409)
Rider T Energy Charge Adjustment		20,833		(\$265)
<u>Demand Charge:</u>				
Total kWb	195.2	194.0	\$1,659	\$1,649
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$4,561	\$4,296
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,561	\$4,296
Total Revenue Per Year (\$000s)			\$54.7	\$51.6
Rider Adjustment (\$000s/Yr)				(\$3.1)

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Rider T J10

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	37.0	36.2		
kWh Per Month	16,033	16,033		
On-Peak kWh		8,053.0		
Off-Peak kWh		7,980		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	7,400	7,240	\$1,006	\$984
201 - 400 kWh/kW	7,400	7,240	\$921	\$901
>400 kWh/kW	1,233	1,553	\$141	\$177
Subtotal	16,033	16,033	\$2,068	\$2,062
On-Peak Surcharge		8,053		\$161
Off-Peak Credit		7,980		(\$239)
Rider T Energy Charge Adjustment		16,033		(\$78)
<u>Demand Charge:</u>				
Total kWb	37.0	36.2	\$315	\$308
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,453	\$2,372
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,453	\$2,372
Total Revenue Per Year (\$000s)			\$29.4	\$28.5
Rider Adjustment (\$000s/Yr)				(\$0.9)

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Rider T J11

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	67.5	67.4		
kWh Per Month	23,133	23,133		
On-Peak kWh		13,600.0		
Off-Peak kWh		9,533		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	13,500	13,480	\$1,835	\$1,832
201 - 400 kWh/kW	9,633	9,653	\$1,199	\$1,201
>400 kWh/kW	0	0	\$0	\$0
Subtotal	23,133	23,133	\$3,034	\$3,033
On-Peak Surcharge		13,600		\$272
Off-Peak Credit		9,533		(\$286)
Rider T Energy Charge Adjustment		23,133		(\$14)
<u>Demand Charge:</u>				
Total kWb	67.5	67.4	\$574	\$573
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,678	\$3,672
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,678	\$3,672
Total Revenue Per Year (\$000s)			\$44.1	\$44.1
Rider Adjustment (\$000s/Yr)				\$0.0

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Rider T J12

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	72.3	54.3		
kWh Per Month	9,553	9,553		
On-Peak kWh		5,452.0		
Off-Peak kWh		4,101		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	9,553	9,553	\$1,298	\$1,298
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	9,553	9,553	\$1,298	\$1,298
On-Peak Surcharge		5,452		\$109
Off-Peak Credit		4,101		(\$123)
Rider T Energy Charge Adjustment		9,553		(\$14)
<u>Demand Charge:</u>				
Total kWb	72.3	54.3	\$615	\$462
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,983	\$1,826
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,983	\$1,826
Total Revenue Per Year (\$000s)			\$23.8	\$21.9
Rider Adjustment (\$000s/Yr)				(\$1.9)

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Rider T J13

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	66.3	25.0		
kWh Per Month	9,287	9,287		
On-Peak kWh		2,833.0		
Off-Peak kWh		6,454		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	9,287	5,000	\$1,262	\$680
201 - 400 kWh/kW	0	4,287	\$0	\$533
>400 kWh/kW	0	0	\$0	\$0
Subtotal	9,287	9,287	\$1,262	\$1,213
On-Peak Surcharge		2,833		\$57
Off-Peak Credit		6,454		(\$194)
Rider T Energy Charge Adjustment		9,287		(\$137)
<u>Demand Charge:</u>				
Total kWb	66.3	25.0	\$564	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,896	\$1,369
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,896	\$1,369
Total Revenue Per Year (\$000s)			\$22.8	\$16.4
Rider Adjustment (\$000s/Yr)				(\$6.4)

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Rider T J14

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	195.0	119.2		
kWh Per Month	20,887	20,887		
On-Peak kWh		6,187.0		
Off-Peak kWh		14,700		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	20,887	20,887	\$2,839	\$2,839
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	20,887	20,887	\$2,839	\$2,839
On-Peak Surcharge		6,187		\$124
Off-Peak Credit		14,700		(\$441)
Rider T Energy Charge Adjustment		20,887		(\$317)
<u>Demand Charge:</u>				
Total kWb	195.0	119.2	\$1,658	\$1,013
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$4,567	\$3,615
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,567	\$3,615
Total Revenue Per Year (\$000s)			\$54.8	\$43.4
Rider Adjustment (\$000s/Yr)				(\$11.4)

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Rider T J15

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	220.5	25.0		
kWh Per Month	51,440	51,440		
On-Peak kWh		14,618.0		
Off-Peak kWh		36,822		
Power Factor	83	83		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	44,100	5,000	\$5,994	\$680
201 - 400 kWh/kW	7,340	5,000	\$913	\$622
>400 kWh/kW	0	41,440	\$0	\$4,730
Subtotal	51,440	51,440	\$6,907	\$6,032
On-Peak Surcharge		14,618		\$292
Off-Peak Credit		36,822		(\$1,105)
Rider T Energy Charge Adjustment		51,440		(\$813)
<u>Demand Charge:</u>				
Total kWb	220.5	25.0	\$1,874	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$18	\$12
Total Base Revenue Per Month			\$8,869	\$5,524
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$8,869	\$5,524
Total Revenue Per Year (\$000s)			\$106.4	\$66.3
Rider Adjustment (\$000s/Yr)				(\$40.1)



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Rider T J16

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	219.5	25.0		
kWh Per Month	31,127	31,127		
On-Peak kWh		73.0		
Off-Peak kWh		31,054		
Power Factor	83	83		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	31,127	5,000	\$4,231	\$680
201 - 400 kWh/kW	0	5,000	\$0	\$622
>400 kWh/kW	0	21,127	\$0	\$2,412
Subtotal	31,127	31,127	\$4,231	\$3,714
On-Peak Surcharge		73		\$1
Off-Peak Credit		31,054		(\$932)
Rider T Energy Charge Adjustment		31,127		(\$931)
<u>Demand Charge:</u>				
Total kWb	219.5	25.0	\$1,866	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$12	\$8
Total Base Revenue Per Month			\$6,179	\$3,084
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$6,179	\$3,084
Total Revenue Per Year (\$000s)			\$74.1	\$37.0
Rider Adjustment (\$000s/Yr)				(\$37.1)

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Rider T J17

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	170.9	25.0		
kWh Per Month	23,313	23,313		
On-Peak kWh		93.0		
Off-Peak kWh		23,220		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	23,313	5,000	\$3,169	\$680
201 - 400 kWh/kW	0	5,000	\$0	\$622
>400 kWh/kW	0	13,313	\$0	\$1,520
Subtotal	23,313	23,313	\$3,169	\$2,822
On-Peak Surcharge		93		\$2
Off-Peak Credit		23,220		(\$697)
Rider T Energy Charge Adjustment		23,313		(\$695)
<u>Demand Charge:</u>				
Total kWb	170.9	25.0	\$1,453	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$4,692	\$2,420
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$4,692	\$2,420
Total Revenue Per Year (\$000s)			\$56.3	\$29.0
Rider Adjustment (\$000s/Yr)				(\$27.3)

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Rider T J18

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	184.1	25.0		
kWh Per Month	27,680	27,680		
On-Peak kWh		1,920.0		
Off-Peak kWh		25,760		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	27,680	5,000	\$3,762	\$680
201 - 400 kWh/kW	0	5,000	\$0	\$622
>400 kWh/kW	0	17,680	\$0	\$2,018
Subtotal	27,680	27,680	\$3,762	\$3,320
On-Peak Surcharge		1,920		\$38
Off-Peak Credit		25,760		(\$773)
Rider T Energy Charge Adjustment		27,680		(\$735)
<u>Demand Charge:</u>				
Total kWb	184.1	25.0	\$1,565	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$5,397	\$2,878
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,397	\$2,878
Total Revenue Per Year (\$000s)			\$64.8	\$34.5
Rider Adjustment (\$000s/Yr)				(\$30.3)

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Rider T J19

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	529.0	274.6		
kWh Per Month	76,176	76,176		
On-Peak kWh		2,824.0		
Off-Peak kWh		73,352		
Power Factor	92	92		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	76,176	54,920	\$10,353	\$7,464
201 - 400 kWh/kW	0	21,256	\$0	\$2,645
>400 kWh/kW	0	0	\$0	\$0
Subtotal	76,176	76,176	\$10,353	\$10,109
On-Peak Surcharge		2,824		\$56
Off-Peak Credit		73,352		(\$2,201)
Rider T Energy Charge Adjustment		76,176		(\$2,145)
<u>Demand Charge:</u>				
Total kWb	529.0	274.6	\$4,497	\$2,334
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$104)	(\$87)
Total Base Revenue Per Month			\$14,816	\$10,291
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$14,816	\$10,291
Total Revenue Per Year (\$000s)			\$177.8	\$123.5
Rider Adjustment (\$000s/Yr)				(\$54.3)

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Rider T J20

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	31.7	31.7		
kWh Per Month	13,920	13,920		
On-Peak kWh		6,320.0		
Off-Peak kWh		7,600		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	6,340	6,340	\$862	\$862
201 - 400 kWh/kW	6,340	6,340	\$789	\$789
>400 kWh/kW	1,240	1,240	\$142	\$142
Subtotal	13,920	13,920	\$1,793	\$1,793
On-Peak Surcharge		6,320		\$126
Off-Peak Credit		7,600		(\$228)
Rider T Energy Charge Adjustment		13,920		(\$102)
<u>Demand Charge:</u>				
Total kWb	31.7	31.7	\$269	\$269
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$2,132	\$2,040
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$2,132	\$2,040
Total Revenue Per Year (\$000s)			\$25.6	\$24.5
Rider Adjustment (\$000s/Yr)				(\$1.1)

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Rider T J21

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	158.6	156.9		
kWh Per Month	17,593	17,593		
On-Peak kWh		7,427.0		
Off-Peak kWh		10,166		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	17,593	17,593	\$2,391	\$2,391
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	17,593	17,593	\$2,391	\$2,391
On-Peak Surcharge		7,427		\$149
Off-Peak Credit		10,166		(\$305)
Rider T Energy Charge Adjustment		17,593		(\$156)
<u>Demand Charge:</u>				
Total kWb	158.6	156.9	\$1,348	\$1,334
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$3,809	\$3,649
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,809	\$3,649
Total Revenue Per Year (\$000s)			\$45.7	\$43.8
Rider Adjustment (\$000s/Yr)				(\$1.9)

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Rider T J22

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	31.0	30.8		
kWh Per Month	12,503	12,503		
On-Peak kWh		5,287.0		
Off-Peak kWh		7,216		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	6,200	6,160	\$843	\$837
201 - 400 kWh/kW	6,200	6,160	\$772	\$767
>400 kWh/kW	103	183	\$12	\$21
Subtotal	12,503	12,503	\$1,627	\$1,625
On-Peak Surcharge		5,287		\$106
Off-Peak Credit		7,216		(\$216)
Rider T Energy Charge Adjustment		12,503		(\$110)
<u>Demand Charge:</u>				
Total kWb	31.0	30.8	\$264	\$262
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$1,961	\$1,857
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$1,961	\$1,857
Total Revenue Per Year (\$000s)			\$23.5	\$22.3
Rider Adjustment (\$000s/Yr)				(\$1.2)

Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
Docket No. 2008-0083, Test-Year 2009

Rider T J23

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	312.5	90.5		
kWh Per Month	60,653	60,653		
On-Peak kWh		14,693.0		
Off-Peak kWh		45,960		
Power Factor	89	89		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	60,653	18,100	\$8,244	\$2,460
201 - 400 kWh/kW	0	18,100	\$0	\$2,252
>400 kWh/kW	0	24,453	\$0	\$2,791
Subtotal	60,653	60,653	\$8,244	\$7,503
On-Peak Surcharge		14,693		\$294
Off-Peak Credit		45,960		(\$1,379)
Rider T Energy Charge Adjustment		60,653		(\$1,085)
<u>Demand Charge:</u>				
Total kWb	312.5	90.5	\$2,656	\$769
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$44)	(\$33)
Total Base Revenue Per Month			\$10,926	\$7,234
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$10,926	\$7,234
Total Revenue Per Year (\$000s)			\$131.1	\$86.8
Rider Adjustment (\$000s/Yr)				(\$44.3)



Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
Docket No. 2008-0083, Test-Year 2009

Rider T J24

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	409.7	25.0		
kWh Per Month	17,140	17,140		
On-Peak kWh		0.0		
Off-Peak kWh		17,140		
Power Factor	72	72		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	17,140	5,000	\$2,330	\$680
201 - 400 kWh/kW	0	5,000	\$0	\$622
>400 kWh/kW	0	7,140	\$0	\$815
Subtotal	17,140	17,140	\$2,330	\$2,117
On-Peak Surcharge		0		\$0
Off-Peak Credit		17,140		(\$514)
Rider T Energy Charge Adjustment		17,140		(\$514)
<u>Demand Charge:</u>				
Total kWb	409.7	25.0	\$3,482	\$213
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$76	\$30
Total Base Revenue Per Month			\$5,958	\$1,926
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$5,958	\$1,926
Total Revenue Per Year (\$000s)			\$71.5	\$23.1
Rider Adjustment (\$000s/Yr)				(\$48.4)

Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
Docket No. 2008-0083, Test-Year 2009

Rider T J25

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	1,007.8	200.0		
kWh Per Month	102,800	102,800		
On-Peak kWh		20,560.0		
Off-Peak kWh		82,240		
Power Factor	92	92		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	102,800	40,000	\$13,972	\$5,437
201 - 400 kWh/kW	0	40,000	\$0	\$4,977
>400 kWh/kW	0	22,800	\$0	\$2,603
Subtotal	102,800	102,800	\$13,972	\$13,017
On-Peak Surcharge		20,560		\$411
Off-Peak Credit		82,240		(\$2,467)
Rider T Energy Charge Adjustment		102,800		(\$2,056)
<u>Demand Charge:</u>				
Total kWb	1,007.8	200.0	\$8,566	\$1,700
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$158)	(\$103)
Total Base Revenue Per Month			\$22,450	\$12,638
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$22,450	\$12,638
Total Revenue Per Year (\$000s)			\$269.4	\$151.7
Rider Adjustment (\$000s/Yr)				(\$117.7)

Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
Docket No. 2008-0083, Test-Year 2009

Rider T J26

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3H	Rider T	Sch. J	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	6,404.2	6,386.2		
kWh Per Month	1,088,392	1,088,392		
On-Peak kWh		631,647.0		
Off-Peak kWh		456,745		
Power Factor	85	85		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	1,088,392	1,088,392	\$147,929	\$147,929
201 - 400 kWh/kW	0	0	\$0	\$0
>400 kWh/kW	0	0	\$0	\$0
Subtotal	1,088,392	1,088,392	\$147,929	\$147,929
On-Peak Surcharge		631,647		\$12,633
Off-Peak Credit		456,745		(\$13,702)
Rider T Energy Charge Adjustment		1,088,392		(\$1,069)
<u>Demand Charge:</u>				
Total kWb	6,404.2	6,386.2	\$54,436	\$54,283
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			\$0	\$0
Total Base Revenue Per Month			\$202,435	\$201,223
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$202,435	\$201,223
Total Revenue Per Year (\$000s)			\$2,429.2	\$2,414.7
Rider Adjustment (\$000s/Yr)				(\$14.5)

Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
Docket No. 2008-0083, Test-Year 2009

Rider Mbl J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J3	Riders M(b)&I	Sch. J3	Riders M(b)&I
Billing Load Per Month:				
Curtailable Load				
Billing kW	3,865.8	620.7		
kWh Per Month	227,200	227,200		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	71	71		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	227,200	124,140	\$30,880	\$16,872
201 - 400 kWh/kW	0	103,060	\$0	\$12,824
>400 kWh/kW	0	0	\$0	\$0
Subtotal	227,200	227,200	\$30,880	\$29,696
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
Total kWb	3,865.8	620.7	\$32,859	\$5,276
Customer Charge			\$70	\$70
Time-of-Day Metering Charge				\$10
Primary Voltage Service Discount			(\$1,339)	(\$734)
Power Factor Adjustment		32023	\$892	\$490
		448.322		
Total Base Revenue Per Month			\$63,362	\$34,808
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$63,362	\$34,808
Total Revenue Per Year (\$000s)			\$760.3	\$417.7
Rider Adjustment (\$000s/Yr)				(\$342.6)

Hawaiian Electric Company, Inc.  
Schedule J - General Service Demand  
Docket No. 2008-008300830083 TEST-YEAR: 2009

Sch U J1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. J	Sch. U	Sch. J	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	242.0	62.5		
kWh Per Month	40,667	40,667		
On-Peak kWh		1,727		
Off-Peak kWh		38,940		
Power Factor	87	87		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	40,667		\$5,527	
201 - 400 kWh/kW	0		\$0	
>400 kWh/kW	0		\$0	
Subtotal	40,667		\$5,527	
On-Peak kWh		1,727		\$237
Off-Peak kWh		38,940		\$3,894
Rider U Energy Charge		40,667		\$4,131
<u>Demand Charge:</u>				
Total kWb	242.0	62.5	\$2,057	\$1,125
Customer Charge			\$70	\$350
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$14)	(\$9)
Total Base Revenue Per Month			\$7,640	\$5,597
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$7,640	\$5,597
Total Revenue Per Year (\$000s)			\$91.7	\$67.2
Rider Adjustment (\$000s/Yr)				(\$24.5)

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-, Test-Year 2009  
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR  
CONDITIONING AND REFRIGERATION SERVICE

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
	<u>MWH</u>	<u>¢/kWh</u>	
<u>ENERGY CHARGE:</u>	33,700	13.4312	\$4,526.3
	<u>kW</u>	<u>\$/kW</u>	
<u>DEMAND CHARGE:</u>	57,502	9.00	\$517.5
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	1,887	25.00	\$47.2
3 PHASE	<u>4,509</u>	60.00	<u>\$270.5</u>
SUBTOTAL	6,396		\$317.7
TOTAL BASE REVENUE			<u>\$5,361.5</u>
ADJUSTMENTS	<u>Rate</u>		
FUEL OIL ADJUSTMENT:	7.221	¢/KWH	\$2,433.5
UNADJUSTED TOTAL REVENUE			<u>\$7,795.0</u>
RIDER ADJUSTMENTS			\$0.0
TOTAL REVENUE AT PRESENT RATES			<u>\$7,795.0</u>
2007 INTERIM RATE INCREASE	7.24%		\$388.2
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$8,183.2</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-, Test-Year 2009  
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR  
CONDITIONING AND REFRIGERATION SERVICE

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
	<u>MWH</u>	<u>¢/kWh</u>	
<u>ENERGY CHARGE:</u>	33,700	13.4312	\$4,526.3
	<u>kW</u>	<u>\$/kW</u>	
<u>DEMAND CHARGE:</u>	57,502	9.00	\$517.5
<u>CUSTOMER CHARGE:</u>	<u>BILLS</u>	<u>\$/month</u>	
1 PHASE	1,887	25.00	\$47.2
3 PHASE	<u>4,509</u>	60.00	<u>\$270.5</u>
SUBTOTAL	6,396		\$317.7
ADJUSTMENTS		<u>Rate</u>	
FUEL OIL ADJUSTMENT:		7.221 ¢/KWH	\$2,433.5
MISCELLANEOUS **			<u>#REF!</u>
TOTAL REVENUE AT PRESENT RATES			#REF!
2007 INTERIM RATE INCREASE		7.24%	\$388.2
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>#REF!</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-, Test-Year 2009  
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR  
CONDITIONING AND REFRIGERATION SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS

	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>
<u>RECORDED:</u>				
RATE H:	<u>9,117</u>	<u>100.0</u>	<u>44,038</u>	<u>100.0</u>
TOTAL	9,117	100.0	44,038	100.0

	<u>NO. OF BILLS</u>		<u>MWH SALES</u>	
	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
<u>FORECASTS:</u>				
RATE H:	<u>100.0</u>	<u>6,396</u>	<u>100.0</u>	<u>33,700</u>
TOTAL	100.0	6,396	100.0	33,700



HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-, Test-Year 2009  
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR  
CONDITIONING AND REFRIGERATION SERVICE

DETERMINATION OF TEST-YEAR BILLING LOADS BY SERVICE PHASE

	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>BILLED KW</u>	<u>KWH/KW</u>
<u>RECORDED:</u>				
RATE H:				
1 PHASE	2,688	29.5	13,172.4	
3 PHASE	<u>6,429</u>	<u>70.5</u>	<u>61,967.6</u>	
TOTAL	9,117	100.0	75,140.0	
<u>RATES H TOTAL</u>				
1 PHASE	2,688	29.5	13,172.4	
3 PHASE	<u>6,429</u>	<u>70.5</u>	<u>61,967.6</u>	
TOTAL	9,117	100.0	75,140.0	586.07
	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>		
<u>FORECASTS:</u>				
1 PHASE	29.5	1,887		
3 PHASE	<u>70.5</u>	<u>4,509</u>		
TOTAL	100.0	6,396	57,502	

HAWAIIAN ELECTRIC COMPANY, INC.  
Docket No. 2008-, Test-Year 2009  
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR  
CONDITIONING AND REFRIGERATION SERVICE

DETERMINATION OF TEST-YEAR BILLS BY SERVICE PHASE

	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>
<u>FORECAST:</u>		
<u>RATE H:</u>		
1 PHASE	29.5	1,887
3 PHASE	<u>70.5</u>	<u>4,509</u>
TOTAL	100.0	6,396

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST YEAR REVENUES

		<u>PRESENT RATES</u>	
	<u>BILLING</u> <u>UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES</u> <u>\$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	372,407	12.2456	\$45,603.5
201 - 400 KWH/KW	332,453	11.4473	\$38,056.9
> 400 KWH/KW	<u>167,492</u>	11.1379	<u>\$18,655.1</u>
SUBTOTAL	872,352		\$102,315.5
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	1,050,407	14.35	\$15,073.3
501 - 1500 KW	474,740	13.85	\$6,575.1
> 1500 KW	415,738	12.85	\$5,342.2
SUBTOTAL	<u>1,940,885</u>		<u>\$26,990.6</u>
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	2,316	350.00	\$810.6
<u>ADJUSTMENTS:</u>			
POWER FACTOR ADJ.			(\$1,163.8)
NETWORK ADJ.			\$204.5
SUBTOTAL			(\$959.3)
UNADJUSTED BASE REVENUE			<u>\$129,157.4</u>
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			(\$52.8)
RIDER I			\$0.0
RIDER T			(\$7.9)
SCHEDULE U			(\$209.1)
Total Rate Rider & Other Revenue Adjustments			<u>(\$269.8)</u>
TOTAL BASE REVENUE			<u>\$128,887.6</u>
Non Schedule U Base Revenue			\$128,382.4
Schedule U Base Revenue			\$505.2
Fuel Oil Adjustment	¢/kWh	7.221	\$62,992.5
TOTAL REVENUE			<u>\$191,880.1</u>
2007 INTERIM RATE INCREASE REVENUES			
Non Schedule U Interim Increase Revenues		7.47%	\$9,590.2
Schedule U Interim Increase Revenues		5.96%	\$30.1
TOTAL INTERIM RATE INCREASE REVENUES			<u>\$9,620.3</u>
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$201,500.4</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	372,407	12.2456	\$45,603.5
201 - 400 KWH/KW	332,453	11.4473	\$38,056.9
> 400 KWH/KW	<u>167,492</u>	11.1379	<u>\$18,655.1</u>
SUBTOTAL	872,352		\$102,315.5
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	1,050,407	14.35	\$15,073.3
501 - 1500 KW	474,740	13.85	\$6,575.1
> 1500 KW	415,738	12.85	\$5,342.2
	-----		-----
SUBTOTAL	1,940,885		\$26,990.6
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	2,316	350.00	\$810.6
<u>ADJUSTMENTS:</u>			
MISCELLANEOUS **			(\$1,229.1)
Fuel Oil Adjustment	¢/kWh	7.221	\$62,992.5
TOTAL REVENUE			<u>\$191,880.1</u>
2007 INTERIM RATE INCREASE REVENUES			\$9,620.3
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$201,500.4</u>

\*\* INCLUDES Power Factor Adj., Network Adj., and Rider Adjustments.

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

DISTRIBUTION OF SALES & BILLS  
BY VOLTAGE SUPPLY SERVICE

<u>RECORDED:</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>	<u>GVARH</u>
PT1	48	1.1	179,781	5.9	26.978195
PT2	-	0.0	0	0.0	0.000000
PP3	1,840	42.2	1,969,910	64.7	584.704631
PP4	87	2.0	18,089	0.6	4.990504
PS5	192	4.4	152,554	5.0	43.786000
PS	<u>2,192</u>	<u>50.3</u>	<u>724,340</u>	<u>23.8</u>	<u>271.202136</u>
TOTAL	4,359	100.0	3,044,674	100.0	931.661466

<u>FORECASTS:</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
PT1	1.1	47	5.9	178,711
PT2	0.0	-	0.0	0
PP3	42.2	1,788	64.7	1,959,763
PP4	2.0	85	0.6	18,174
PS5	4.4	186	5.0	151,450
PS	<u>50.3</u>	<u>2,130</u>	<u>23.8</u>	<u>720,902</u>
TOTAL	100.0	4,236	100.0	3,029,000

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING KW  
BY VOLTAGE SUPPLY SERVICE

<u>TYPE OF CUSTOMERS:</u>	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	<u>KWH/KW</u>
PT1	335,798	535.38	333,802	535.38
PT2	-	-	-	-
PP3	3,752,151	525.01	3,732,811	525.01
PP4	38,956	464.34	39,139	464.34
PS5	363,664	419.49	361,034	419.49
PS	<u>1,587,376</u>	<u>456.31</u>	<u>1,579,851</u>	<u>456.31</u>
TOTAL	6,077,944.4	500.94	6,046,637	500.94

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR SCHEDULE PS5 CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	25.76	25.76	25.76	93,002
501 - 1500 KW	77.28	67.52	41.76	150,768
> 1500 KW		100.00	32.48	117,264
TOTAL			100.00	361,034
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW		44.37	44.37	67,198
201 - 400 KWH/KW		83.03	38.66	58,551
> 400 KWH/KW		100.00	16.97	25,701
TOTAL			100.00	151,450
<u>FORECASTS:</u>				
SALES, MWH	151,450			
BILLS	186			
KW	361,034			
KWH/BILL	814,247			
KW/BILL	1,941			

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF REVENUES AND NETWORK ADJ. FOR NETWORK SERVICE

Rate Block	Billing Units	PRESENT RATES	
		Unit Price	Revenues \$000s
<u>DEMAND CHARGE:</u>	<u>kW</u>	<u>\$/kW</u>	
0 - 500 KW	93,002	14.35	\$1,334.6
501 - 1500 KW	150,768	13.85	\$2,088.1
> 1500 KW	117,264	12.85	\$1,506.8
SUBTOTAL	361,034		\$4,929.5
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	67,198	12.2456	\$8,228.8
201 - 400 KWH/KW	58,551	11.4473	\$6,702.5
> 400 KWH/KW	25,701	11.1379	\$2,862.6
SUBTOTAL	151,450		\$17,793.9
Total Demand & Energy			<u>\$22,723.4</u>
<u>Supply Voltage Adj.</u>		<u>% Adj.</u>	
Network Adjustment		0.9	\$204.5



HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR SCHEDULE PS CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	59.66	54.12	54.12	1,050,407
501 - 1500 KW	178.99	78.58	24.46	474,740
> 1500 KW		100.00	21.42	415,738
TOTAL			100.00	1,940,885
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW		42.69	42.69	372,407
201 - 400 KWH/KW		80.80	38.11	332,453
> 400 KWH/KW		100.00	19.20	167,492
TOTAL			100.00	872,352
<u>FORECASTS:</u>				
SALES, MWH	872,352			
BILLS	2,316			
KW	1,940,885			
KWH/BILL	376,663			
KW/BILL	838			

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF POWER FACTOR ADJUSTMENT

	Recorded
Kwh	876,893,861
Kvarhrs	314,988,136
POWER FACTOR CALCULATED	94.11

	<u>Present Rates</u>
CALCULATED PF (%)	94.0
BASE PF (%)	<u>85.0</u>
DIFFERENCE	(9.0)
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJUSTMENT RATE	(0.009)
Demand + Energy Charges	\$129,306.1
POWER FACTOR ADJUSTMENT	(\$1,163.8)

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE  
Docket No. 2008-0083 TEST-YEAR: 2009

SUMMARY OF TEST-YEAR REVENUES ADJUSTMENTS  
FOR RIDER SERVICE AT PRESENT RATES

<u>RIDER M(B)</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider Mb PS1	(\$16.8)
Rider Mb PS2	(\$28.4)
Rider Mb PS3	(\$7.6)
<b>TOTAL</b>	<b>(\$52.8)</b>

<u>RIDER T</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Rider T PS1	(\$7.9)
<b>TOTAL</b>	<b>(\$7.9)</b>

<u>SCHEDULE U</u>	<u>PRESENT</u> <u>(\$1000s)</u>
Sch U PS1	(\$30.4)
Sch U PS2	(\$68.1)
Sch U PS3	(\$110.6)
<b>TOTAL</b>	<b>(\$209.1)</b>

Hawaiian Electric Company, Inc.  
Schedule PS - Large Power Secondary Voltage Service  
Docket No. 2008-0083 TEST-YEAR: 2009

Rider Mb PS1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtailable Load		114.5		
Billing kW	743.1	657.2		
kWh Per Month	341,533.0	341,533		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	98.0	98		
kVarhr Per Month	59,200.0	59,200		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	148,620	131,440	\$18,199	\$16,096
201 - 400 kWh/kW	148,620	131,440	\$17,013	\$15,046
>400 kWh/kW	44,293	78,653	\$4,933	\$8,760
Subtotal	341,533	341,533	\$40,145	\$39,902
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$7,175	\$7,175
501 - 1500 kWb	243.1	157.2	\$3,367	\$2,177
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	743.1	657.2	\$10,542	\$9,352
Customer Charge			\$350	\$350
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$659)	(\$640)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$50,378	\$48,974
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$50,378	\$48,974
Total Revenue Per Year (\$000s)			\$604.5	\$587.7
Rider Adjustment (\$000s/Yr)				(\$16.8)

Hawaiian Electric Company, Inc.  
Schedule PS - Large Power Secondary Voltage Service  
Docket No. 2008-0083 TEST-YEAR: 2009

Rider Mb PS2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtailable Load		196.2		
Billing kW	999.8	852.6		
kWh Per Month	371,020.0	371,020		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	82.0	82		
kVarhr Per Month	256,960.0	256,960		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	199,960	170,520	\$24,486	\$20,881
201 - 400 kWh/kW	171,060	170,520	\$19,582	\$19,520
>400 kWh/kW	0	29,980	\$0	\$3,339
Subtotal	371,020	371,020	\$44,068	\$43,740
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$7,175	\$7,175
501 - 1500 kWb	499.8	352.6	\$6,922	\$4,884
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	999.8	852.6	\$14,097	\$12,059
Customer Charge			\$350	\$350
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			\$174	\$167
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$58,689	\$56,326
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$58,689	\$56,326
Total Revenue Per Year (\$000s)			\$704.3	\$675.9
Rider Adjustment (\$000s/Yr)				(\$28.4)

Hawaiian Electric Company, Inc.  
Schedule PS - Large Power Secondary Voltage Service  
Docket No. 2008-0083 TEST-YEAR: 2009

Rider Mb PS3

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Rider M(b)	Sch. PS	Rider M(b)
Billing Load Per Month:				
Curtailable Load		51.6		
Billing kW	697.0	658.3		
kWh Per Month	331,060.0	331,060		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	90.0	90		
kVarhr Per Month	162,580.0	162,580		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	139,400	131,660	\$17,070	\$16,123
201 - 400 kWh/kW	139,400	131,660	\$15,958	\$15,072
>400 kWh/kW	52,260	67,740	\$5,821	\$7,545
Subtotal	331,060	331,060	\$38,849	\$38,740
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$7,175	\$7,175
501 - 1500 kWb	197.0	158.3	\$2,728	\$2,192
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	697.0	658.3	\$9,903	\$9,367
Customer Charge			\$350	\$350
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$244)	(\$241)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$48,858	\$48,226
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$48,858	\$48,226
Total Revenue Per Year (\$000s)			\$586.3	\$578.7
Rider Adjustment (\$000s/Yr)				(\$7.6)

Hawaiian Electric Company, Inc.  
Schedule PS - Large Power Secondary Voltage Service  
Docket No. 2008-0083 TEST-YEAR: 2009

Rider T PS1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PS	Rider T	Sch. PS	Rider T
Billing Load Per Month:				
Curtailable Load				
Billing kW	1,091.0	1,080.6		
kWh Per Month	526,533.0	526,533		
On-Peak kWh		306,067.0		
Off-Peak kWh		220,467.0		
Power Factor	88.0	88		
kVarhr Per Month	282,567.0	282,567		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	218,200	216,120	\$26,720	\$26,465
201 - 400 kWh/kW	218,200	216,120	\$24,978	\$24,740
>400 kWh/kW	90,133	94,293	\$10,039	\$10,502
Subtotal	526,533	526,533	\$61,737	\$61,707
On-Peak Surcharge		306,067		\$6,121
Off-Peak Credit		220,467		(\$6,614)
Rider T Energy Charge Adjustment		526,534		(\$493)
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$7,175	\$7,175
501 - 1500 kWb	591.0	580.6	\$8,185	\$8,041
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	1,091.0	1,080.6	\$15,360	\$15,216
Customer Charge			\$350	\$350
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$231)	(\$231)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$77,216	\$76,559
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$77,216	\$76,559
Total Revenue Per Year (\$000s)			\$926.6	\$918.7
Rider Adjustment (\$000s/Yr)				(\$7.9)

Hawaiian Electric Company, Inc.  
Schedule PS - General Service Demand  
Docket No. 2008-0083 TEST-YEAR: 2009

Sch U PS1

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Sch. U	Sch. PS	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	595.6	464.4		
kWh Per Month	134,200	134,200		
On-Peak kWh		13,347		
Off-Peak kWh		120,853		
Power Factor	89	89		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	119,120		\$14,587	
201 - 400 kWh/kW	15,080		\$1,726	
>400 kWh/kW	0		\$0	
Subtotal	134,200		\$16,313	
On-Peak kWh		13,347		\$1,832
Off-Peak kWh		120,853		\$12,085
Rider U Energy Charge		134,200		\$13,917
<u>Demand Charge:</u>				
Total kWb	595.6	464.4	\$8,499	\$8,359
Customer Charge			\$350	\$350
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$99)	(\$89)
Total Base Revenue Per Month			\$25,063	\$22,537
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$25,063	\$22,537
Total Revenue Per Year (\$000s)			\$300.8	\$270.4
Rider Adjustment (\$000s/Yr)				(\$30.4)



Hawaiian Electric Company, Inc.  
Schedule PS - General Service Demand  
Docket No. 2008-0083 TEST-YEAR: 2009

Sch U PS2

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Sch. U	Sch. PS	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	357.2	39.1		
kWh Per Month	67,458	67,458		
On-Peak kWh		5,369		
Off-Peak kWh		62,089		
Power Factor	96	96		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	67,458		\$8,261	
201 - 400 kWh/kW	0		\$0	
>400 kWh/kW	0		\$0	
Subtotal	67,458		\$8,261	
On-Peak kWh		5,369		\$737
Off-Peak kWh		62,089		\$6,209
Rider U Energy Charge		67,458		\$6,946
<u>Demand Charge:</u>				
Total kWb	357.2	39.1	\$5,126	\$704
Customer Charge			\$350	\$350
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$147)	(\$84)
Total Base Revenue Per Month			\$13,590	\$7,916
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$13,590	\$7,916
Total Revenue Per Year (\$000s)			\$163.1	\$95.0
Rider Adjustment (\$000s/Yr)				(\$68.1)

Hawaiian Electric Company, Inc.  
Schedule PS - General Service Demand  
Docket No. 2008-0083 TEST-YEAR: 2009

Sch U PS3

	<u>Billing Units @ Present Rates</u>		<u>Revenues @ Present Rates</u>	
	Sch. PS	Sch. U	Sch. PS	Sch. U
Billing Load Per Month:				
Curtailable Load				
Billing kW	542.5	40.8		
kWh Per Month	105,680	105,680		
On-Peak kWh		2,640		
Off-Peak kWh		103,040		
Power Factor	94	94		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	105,680		\$12,941	
201 - 400 kWh/kW	0		\$0	
>400 kWh/kW	0		\$0	
Subtotal	105,680		\$12,941	
On-Peak kWh		2,640		\$362
Off-Peak kWh		103,040		\$10,304
Rider U Energy Charge		105,680		\$10,666
<u>Demand Charge:</u>				
Total kWb	542.5	40.8	\$7,764	\$734
Customer Charge			\$350	\$350
Primary Voltage Service Discount			\$0	\$0
Power Factor Adjustment			(\$186)	(\$103)
Total Base Revenue Per Month			\$20,869	\$11,647
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$20,869	\$11,647
Total Revenue Per Year (\$000s)			\$250.4	\$139.8
Rider Adjustment (\$000s/Yr)				(\$110.6)

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	739,155	12.1534	\$89,832.5
201 - 400 KWH/KW	661,818	11.3702	\$75,250.0
> 400 KWH/KW	576,964	11.0668	\$63,851.5
SUBTOTAL	1,977,937		\$228,934.0
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	884,899	15.11	\$13,370.8
501 - 1500 KW	815,873	14.61	\$11,919.9
> 1500 KW	2,071,178	13.61	\$28,188.7
SUBTOTAL	3,771,950		\$53,479.4
<u>BILLING DEMAND CREDIT:</u>	<u>(kW)</u>		
Directly Served from Substation	2,024,888	(1.76)	(\$3,563.8)
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	1,873	400.00	\$749.2
<u>ADJUSTMENTS:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
POWER FACTOR ADJ.			(\$2,788.5)
SECONDARY METERING ADJ.	18,174	0.2142	\$38.9
SUBTOTAL			(\$2,749.6)
UNADJUSTED BASE REVENUE			\$276,849.2
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			(\$918.5)
RIDER I			(\$105.8)
MULTIPLE RIDERS			(\$90.7)
Total Rate Rider & Other Revenue Adjustments			(\$1,115.0)
Total Base Revenue			\$275,734.2
Not Directly Served			\$133,569.5
Directly Served			\$142,164.7
Fuel Oil Adjustment	¢/kWh	7.221	\$142,826.8
TOTAL REVENUE			\$418,561.0
INTERIM RATE INCREASE REVENUES (Not directly served)		7.61%	\$10,164.6
INTERIM RATE INCREASE REVENUES (Directly served)		1.84%	\$2,615.8
TOTAL INTERIM RATE INCREASE			\$12,780.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			\$431,341.4

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
0 - 200 KWH/KW	739,155	12.1534	\$89,832.5
201 - 400 KWH/KW	661,818	11.3702	\$75,250.0
> 400 KWH/KW	<u>576,964</u>	11.0668	<u>\$63,851.5</u>
SUBTOTAL	1,977,937		\$228,934.0
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	884,899	15.11	\$13,370.8
501 - 1500 KW	815,873	14.61	\$11,919.9
> 1500 KW	2,071,178	13.61	\$28,188.7
	-----		-----
SUBTOTAL	3,771,950		\$53,479.4
<u>BILLING DEMAND CREDIT:</u>	<u>(kW)</u>		
Directly Served from Substation			
	2,024,888	(1.76)	(\$3,563.8)
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	1,873	400.00	\$749.2
<u>ADJUSTMENTS:</u>	<u>(MWH)</u>	<u>¢/kWh</u>	
MISCELLANEOUS **			(\$3,864.6)
Fuel Oil Adjustment	¢/kWh	7.221	\$142,826.8
TOTAL REVENUE			<u>\$418,561.0</u>
INTERIM RATE INCREASE REVENUES			\$12,780.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$431,341.4</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DISTRIBUTION OF SALES & BILLS  
BY VOLTAGE SUPPLY SERVICE

<u>RECORDED:</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>	<u>GVARH</u>
PT1	48	1.1	179,781	5.9	26.978195
PT2	-	0.0	0	0.0	0.000000
PP3	1,840	42.2	1,969,910	64.7	584.704631
PP4	87	2.0	18,089	0.6	4.990504
PS5	192	4.4	152,554	5.0	43.786000
PS	<u>2,192</u>	50.3	<u>724,340</u>	<u>23.8</u>	<u>271.202136</u>
TOTAL	4,359	100.0	3,044,674	100.0	931.661466

<u>FORECASTS:</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
PT1	1.1	47	5.9	178,711
PT2	0.0	-	0.0	0
PP3	42.2	1,788	64.7	1,959,763
PP4	2.0	85	0.6	18,174
PS5	4.4	186	5.0	151,450
PS	<u>50.3</u>	<u>2,131</u>	<u>23.8</u>	<u>720,902</u>
TOTAL	100.0	4,236	100.0	3,029,000

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING KW  
BY VOLTAGE SUPPLY SERVICE

<u>TYPE OF CUSTOMERS:</u>	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	<u>KWH/KW</u>
PT1	335,798	535.38	333,802	535.38
PT2	-	-	-	-
PP3	3,752,151	525.01	3,732,811	525.01
PP4	38,956	464.34	39,139	464.34
PS5	363,664	419.49	361,034	419.49
PS	<u>1,587,376</u>	<u>456.31</u>	<u>1,579,851</u>	<u>456.31</u>
TOTAL	6,077,944.4	500.94	6,046,637.0	500.94

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR SCHEDULE PP CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	24.83	23.46	23.46	884,899
501 - 1500 KW	74.48	45.09	21.63	815,873
> 1500 KW		100.00	54.91	2,071,178
TOTAL			100.00	3,771,950
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW		37.37	37.37	739,155
201 - 400 KWH/KW		70.83	33.46	661,818
> 400 KWH/KW		100.00	29.17	576,964
TOTAL			100.00	1,977,937
<u>FORECASTS:</u>				
SALES, MWH	1,977,937			
BILLS	1,873			
KW	3,771,950			
KWH/BILL	1,056,026.16			
KW/BILL	2,013.85			

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009  
DETERMINATION OF POWER FACTOR ADJUSTMENT

	Recorded
KWH	1,987,998,680
KVARHR	589,695,135
POWER FACTOR	95.0000
	<u>Present Rates</u>
CALCULATED PF (%)	95.0
BASE PF (%)	<u>85.0</u>
DIFFERENCE	(10.0)
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJUSTMENT RATE	(0.010)
TOTAL DMD/ENERGY CHR.	\$278,849.6
POWER FACTOR ADJ.	(\$2,788.5)



HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

SUMMARY OF TEST-YEAR REVENUES ADJUSTMENTS  
FOR RIDER SERVICE

<u>RIDER M(B)</u>	<u>PRESENT (\$1000s)</u>
Rider Mb PP1	(\$13.5)
Rider Mb PP2	(\$23.0)
Rider Mb PP3	(\$56.9)
Rider Mb PP4	(\$2.0)
Rider Mb PP5	(\$94.7)
Rider Mb PP6	(\$5.4)
Rider Mb PP7	(\$6.8)
Rider Mb PP8	(\$716.2)
 TOTAL	 (\$918.5)

<u>RIDER I</u>	<u>PRESENT (\$1000s)</u>
Rider I PP1	(\$105.8)
 TOTAL	 (\$105.8)

<u>MULTIPLE RIDERS</u>	<u>PRESENT (\$1000s)</u>
RiderMult PP1	(\$88.5)
RiderMult PP2	(\$2.2)
 TOTAL	 (\$90.7)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		97.5		
Billing kW	753.9	680.8		
kWh Per Month	367,650	367,650		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	94	94		
kVarhr Per Month	131,150	131,150		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	150,780	136,160	\$18,325	\$16,548
201 - 400 kWh/kW	150,780	136,160	\$17,144	\$15,482
>400 kWh/kW	66,090	95,330	\$7,314	\$10,550
Subtotal	367,650	367,650	\$42,783	\$42,580
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	253.9	180.8	\$3,263	\$2,323
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	753.9	680.8	\$9,938	\$8,998
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$474)	(\$464)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$52,647	\$51,524
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$52,647	\$51,524
Total Revenue Per Year (\$000s)			\$631.8	\$618.3
Rider Adjustment (\$000s/Yr)				(\$13.5)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		165.2		
Billing kW	1,320.4	1,196.5		
kWh Per Month	723,700	723,700		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	91	91		
kVarhr Per Month	327,300	327,300		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	264,080	239,300	\$32,095	\$29,083
201 - 400 kWh/kW	264,080	239,300	\$30,026	\$27,209
>400 kWh/kW	195,540	245,100	\$21,640	\$27,125
Subtotal	723,700	723,700	\$83,761	\$83,417
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	820.4	696.5	\$10,542	\$8,950
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	1,320.4	1,196.5	\$17,217	\$15,625
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$606)	(\$594)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$100,772	\$98,858
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$100,772	\$98,858
Total Revenue Per Year (\$000s)			\$1,209.3	\$1,186.3
Rider Adjustment (\$000s/Yr)				(\$23.0)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP3

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		439.2		
Billing kW	1,865.6	1,536.2		
kWh Per Month	1,048,600	1,048,600		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	99	99		
kVarhr Per Month	137,000	137,000		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	373,120	307,240	\$45,347	\$37,340
201 - 400 kWh/kW	373,120	307,240	\$42,424	\$34,934
>400 kWh/kW	302,360	434,120	\$33,462	\$48,043
Subtotal	1,048,600	1,048,600	\$121,233	\$120,317
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	1,000.0	1,000.0	\$12,850	\$12,850
>1500 kWb	365.6	36.2	\$4,332	\$429
Subtotal	1,865.6	1,536.2	\$23,857	\$19,954
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$2,031)	(\$1,964)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$143,459	\$138,717
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$143,459	\$138,717
Total Revenue Per Year (\$000s)			\$1,721.5	\$1,664.6
Rider Adjustment (\$000s/Yr)				(\$56.9)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP4

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		15.5		
Billing kW	791.9	780.3		
kWh Per Month	455,350	455,350		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	94	94		
kVarhr Per Month	147,750	147,750		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	158,380	156,060	\$19,249	\$18,967
201 - 400 kWh/kW	158,380	156,060	\$18,008	\$17,744
>400 kWh/kW	138,590	143,230	\$15,337	\$15,851
Subtotal	455,350	455,350	\$52,594	\$52,562
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	291.9	280.3	\$3,751	\$3,602
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	791.9	780.3	\$10,426	\$10,277
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$567)	(\$566)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$62,853	\$62,683
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$62,853	\$62,683
Total Revenue Per Year (\$000s)			\$754.2	\$752.2
Rider Adjustment (\$000s/Yr)				(\$2.0)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP5

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		778.8		
Billing kW	2,312.9	1,728.8		
kWh Per Month	726,000	726,000		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	90	90		
kVarhr Per Month	359,040	359,040		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	462,580	345,760	\$56,219	\$42,022
201 - 400 kWh/kW	263,420	345,760	\$29,951	\$39,314
>400 kWh/kW	0	34,480	\$0	\$3,816
Subtotal	726,000	726,000	\$86,170	\$85,152
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	1,000.0	1,000.0	\$12,850	\$12,850
>1500 kWb	812.9	228.8	\$9,633	\$2,711
Subtotal	2,312.9	1,728.8	\$29,158	\$22,236
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$577)	(\$537)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$115,151	\$107,261
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$115,151	\$107,261
Total Revenue Per Year (\$000s)			\$1,381.8	\$1,287.1
Rider Adjustment (\$000s/Yr)				(\$94.7)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP6

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP3	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		38.1		
Billing kW	348.3	319.7		
kWh Per Month	187,458	187,458		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	96	96		
kVarhr Per Month	52,375	52,375		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	69,660	63,940	\$8,466	\$7,771
201 - 400 kWh/kW	69,660	63,940	\$7,920	\$7,270
>400 kWh/kW	48,138	59,578	\$5,327	\$6,593
Subtotal	187,458	187,458	\$21,713	\$21,634
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	348.3	319.7	\$4,650	\$4,268
501 - 1500 kWb	0.0	0.0	\$0	\$0
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	348.3	319.7	\$4,650	\$4,268
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$290)	(\$285)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$26,473	\$26,027
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$26,473	\$26,027
Total Revenue Per Year (\$000s)			\$317.7	\$312.3
Rider Adjustment (\$000s/Yr)				(\$5.4)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP7

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP6	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		52.3		
Billing kW	802.7	763.5		
kWh Per Month	307,067	307,067		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	88	88		
kVarhr Per Month	163,067	163,067		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	160,540	152,700	\$19,511	\$18,558
201 - 400 kWh/kW	146,527	152,700	\$16,660	\$17,362
>400 kWh/kW	0	1,667	\$0	\$184
Subtotal	307,067	307,067	\$36,171	\$36,104
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	302.7	263.5	\$3,890	\$3,386
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	802.7	763.5	\$10,565	\$10,061
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$140)	(\$138)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$46,996	\$46,437
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$46,996	\$46,437
Total Revenue Per Year (\$000s)			\$564.0	\$557.2
Rider Adjustment (\$000s/Yr)				(\$6.8)



Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider Mb PP8

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch.PP6	Rider M(b)	Sch. PP3	Rider M(b)
Billing Load Per Month:				
Curtailable Load		5,512.0		
Billing kW	54,907.0	50,773.0		
kWh Per Month	28,344,000	28,344,000		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	98	98		
kVarhr Per Month	1,376,000	1,376,000		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	10,981,400	10,154,600	\$1,334,613	\$1,234,129
201 - 400 kWh/kW	10,981,400	10,154,600	\$1,248,607	\$1,154,598
>400 kWh/kW	6,381,200	8,034,800	\$706,195	\$889,195
Subtotal	28,344,000	28,344,000	\$3,289,415	\$3,277,922
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	1,000.0	1,000.0	\$12,850	\$12,850
>1500 kWb	53,407.0	49,273.0	\$632,873	\$583,885
Subtotal	54,907.0	50,773.0	\$652,398	\$603,410
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$51,244)	(\$50,457)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$3,890,969	\$3,831,285
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$3,890,969	\$3,831,285
Total Revenue Per Year (\$000s)			\$46,691.6	\$45,975.4
Rider Adjustment (\$000s/Yr)				(\$716.2)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

Rider I PP1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider I	Sch. PP3	Rider I
Billing Load Per Month:				
Curtailable Load				
Billing kW	2,313.2	1,706.3		
kWh Per Month	868,800.0	868,800		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	73	73		
kVarhr Per Month	804,900.0	804,900		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	462,640	341,260	\$56,226	\$41,475
201 - 400 kWh/kW	406,160	341,260	\$46,181	\$38,802
>400 kWh/kW	0	186,280	\$0	\$20,615
Subtotal	868,800	868,800	\$102,407	\$100,892
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	1,000.0	1,000.0	\$12,850	\$12,850
>1500 kWb	813.2	206.3	\$9,636	\$2,445
Subtotal	2,313.2	1,706.3	\$29,161	\$21,970
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				
Power Factor Adjustment			\$1,579	\$1,474
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$133,547	\$124,736
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$133,547	\$124,736
Total Revenue Per Year (\$000s)			\$1,602.6	\$1,496.8
Rider Adjustment (\$000s/Yr)				(\$105.8)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

RiderMult PP1

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Rider M(a&b)	Sch. PP3	Rider M(a&b)
Billing Load Per Month:				
Curtailable Load				
Billing kW	1,896.5	1,396.5		
kWh Per Month	1,162,050.0	1,162,050		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	90.0	90		
kVarhr Per Month	0.0	0		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	379,300	279,300	\$46,098	\$33,944
201 - 400 kWh/kW	379,300	279,300	\$43,127	\$31,757
>400 kWh/kW	403,450	603,450	\$44,649	\$66,783
Subtotal	1,162,050	1,162,050	\$133,874	\$132,484
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	500.0	500.0	\$6,675	\$6,675
501 - 1500 kWb	1,000.0	896.5	\$12,850	\$11,520
>1500 kWb	396.5	0.0	\$4,699	\$0
Subtotal	1,896.5	1,396.5	\$24,224	\$18,195
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$790)	(\$753)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$157,708	\$150,336
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$157,708	\$150,336
Total Revenue Per Year (\$000s)			\$1,892.5	\$1,804.0
Rider Adjustment (\$000s/Yr)				(\$88.5)

Hawaiian Electric Company, Inc.  
Schedule PP - Large Power Primary Voltage Service  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

RiderMult PP2

	<u>Billing Units</u>		<u>Revenues @ Present Rates</u>	
	Sch. PP3	Riders M(b)&I	Sch. PP3	Riders M(b)&I
Billing Load Per Month:				
Curtailable Load				
Billing kW	342.6	329.9		
kWh Per Month	86,256.0	86,256		
On-Peak kWh		0		
Off-Peak kWh		0		
Power Factor	87	87		
kVarhr Per Month	0.0	0		
<u>Energy Charge:</u>				
0 - 200 kWh/kW	68,520	65,980	\$8,328	\$8,019
201 - 400 kWh/kW	17,736	20,276	\$2,017	\$2,305
>400 kWh/kW	0	0	\$0	\$0
Subtotal	86,256	86,256	\$10,345	\$10,324
On-Peak Surcharge		0		\$0
Off-Peak Credit		0		\$0
Rider T Energy Charge Adjustment		0		\$0
<u>Demand Charge:</u>				
0 - 500 kWb	342.6	329.9	\$4,574	\$4,404
501 - 1500 kWb	0.0	0.0	\$0	\$0
>1500 kWb	0.0	0.0	\$0	\$0
Subtotal	342.6	329.9	\$4,574	\$4,404
Customer Charge			\$400	\$400
Time-of-Day Metering Charge				\$10
Power Factor Adjustment			(\$30)	(\$29)
kVarhr Charge			\$0	\$0
Total Base Revenue Per Month			\$15,289	\$15,109
Fuel Oil Adjustment			\$0	\$0
Rate Adjustment (AES Refund)			\$0	\$0
IRP Adjustment			\$0	\$0
DSM Adjustment			\$0	\$0
Total Revenue Per Month			\$15,289	\$15,109
Total Revenue Per Year (\$000s)			\$183.5	\$181.3
Rider Adjustment (\$000s/Yr)				(\$2.2)

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST-YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWH</u>	
0 - 200 KWH/KW	63,706	11.6037	\$7,392.3
201 - 400 KWH/KW	57,451	10.8318	\$6,223.0
> 400 KWH/KW	<u>57,554</u>	10.5326	<u>\$6,061.9</u>
SUBTOTAL	178,711		\$19,677.2
<u>DEMAND CHARGE:</u>	<u>(kW)</u>	<u>\$/kW</u>	
0 - 500 KW	21,831	14.00	\$305.6
501 - 1500 KW	38,387	13.50	\$518.2
> 1500 KW	<u>273,584</u>	12.50	<u>\$3,419.8</u>
SUBTOTAL	333,802		\$4,243.6
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	47	400.00	\$18.8
<u>ADJUSTMENTS:</u>			
POWER FACTOR ADJ.			(\$334.9)
SECONDARY METERING ADJ.			\$0.0
SUBTOTAL			<u>(\$334.9)</u>
UNADJUSTED BASE REVENUE			\$23,604.7
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			\$0.0
RIDER I			\$0.0
RIDER T			\$0.0
Total Rate Rider & Other Revenue Adjustments			<u>\$0.0</u>
TOTAL BASE REVENUE			\$23,604.7
Fuel Oil Adjustment	¢/kWH	7.221	<u>\$12,904.7</u>
TOTAL REVENUE			\$36,509.4
2007 INTERIM RATE INCREASE		6.56%	\$1,548.5
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$38,057.9</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST-YEAR REVENUES

		<u>PRESENT RATES</u>	
	<u>BILLING</u> <u>UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES</u> <u>\$1000S</u>
<u>ENERGY CHARGE:</u>	<u>(MWH)</u>	<u>¢/kWH</u>	
0 - 200 KWH/KW	63,706	11.6037	\$7,392.3
201 - 400 KWH/KW	57,451	10.8318	\$6,223.0
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SUBTOTAL	178,711		\$19,677.2
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> 1500 KW	<u>273,584</u>	12.50	<u>\$3,419.8</u>
SUBTOTAL	333,802		\$4,243.6
	<u>BILLS</u>	<u>\$/month</u>	
<u>CUSTOMER CHARGE:</u>	47	400.00	\$18.8
<u>ADJUSTMENTS:</u>			
MISCELLANEOUS **			(\$334.9)
Fuel Oil Adjustment	¢/kWH	7.221	\$12,904.7
TOTAL REVENUES AT PRESENT RATES			\$36,509.4
2007 INTERIM RATE INCREASE REVENUES		6.56%	\$1,548.5
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$38,057.9</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DISTRIBUTION OF SALES & BILLS  
BY VOLTAGE SUPPLY SERVICE

<u>RECORDED:</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>	<u>PERCENT OF TOTAL</u>	<u>GVARH</u>
PT1	48	1.1	179,781	5.9	26.978195
PT2	-	0.0	0	0.0	0.000000
PP3	1,840	42.2	1,969,910	64.7	584.704631
PP4	87	2.0	18,089	0.6	4.990504
PS5	192	4.4	152,554	5.0	43.786000
PS	<u>2,192</u>	<u>50.3</u>	<u>724,340</u>	<u>23.8</u>	<u>271.202136</u>
TOTAL	4,359	100.0	3,044,674	100.0	931.661466

<u>FORECASTS:</u>	<u>PERCENT OF TOTAL</u>	<u>NUMBER OF BILLS</u>	<u>PERCENT OF TOTAL</u>	<u>MWH SALES</u>
PT1	1.1	47	5.9	178,711
PT2	0.0	-	0.0	0
PP3	42.2	1,788	64.7	1,959,763
PP4	2.0	85	0.6	18,174
PS5	4.4	186	5.0	151,450
PS	<u>50.3</u>	<u>2,130</u>	<u>23.8</u>	<u>720,902</u>
TOTAL	100.0	4,236	100.0	3,029,000

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING KW  
BY VOLTAGE SUPPLY SERVICE

<u>TYPE OF CUSTOMERS:</u>	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	<u>KWH/KW</u>
PT1	335,798	535.38	333,802	535.38
PT2	-	-	-	-
PP3	3,752,151	525.01	3,732,811	525.01
PP4	38,956	464.34	39,139	464.34
PS5	363,664	419.49	361,034	419.49
PS	1,587,376	456.31	1,579,851	456.31
TOTAL	6,077,944.4	500.94	6,046,637	500.94



HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR SCHEDULE PT1 CUSTOMERS

	<u>RECORDED</u>		<u>FORECASTS</u>	
	<u>MWH</u>	<u>% OF TOTAL</u>	<u>MWH</u>	<u>% OF TOTAL</u>
<u>SALES, MWH</u>				
0 - 200 KWH/KW	1,197.8	0.67	1,197	0.67
201 - 400 KWH/KW	42,714.4	23.76	42,462	23.76
> 400 KWH/KW	<u>135,869.1</u>	<u>75.57</u>	<u>135,052</u>	<u>75.57</u>
TOTAL	179,781.3	100.00	178,711	100.00
 <u>KW BILLED</u>				
	<u>KW</u>	<u>KWH/KW</u>	<u>KW</u>	
0 - 200 KWH/KW	21,270.7	56.31	21,257	
201 - 400 KWH/KW	119,506.9	357.42	118,801	
> 400 KWH/KW	<u>195,020.5</u>	<u>696.69</u>	<u>193,744</u>	
TOTAL	335,798.1	535.38	333,802	

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR SCHEDULE PT1 CUSTOMERS

	<u>LOAD FACTOR BLOCKS (KWH/KW)</u>			
	<u>0 -200</u>	<u>201 - 400</u>	<u>&gt; 400</u>	<u>TOTAL</u>
0 - 200 KWH/KW	1,197	23,760	38,749	63,706
201 - 400 KWH/KW	-	18,702	38,749	57,451
> 400 KWH/KW	-	-	57,554	57,554
SUBTOTAL	1,197	42,462	135,052	178,711
<u>FORECASTS:</u>				
SALES, MWH	1,197	42,462	135,052	178,711
KW	21,257	118,801	193,744	333,802

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR SCHEDULE PT1 CUSTOMERS

	UPPER LIM. OF BLK. AS % OF AVE. <u>USE/BILL</u>	CUM UNIT @ EA. UPPER LIM. AS % <u>OF TOTAL</u>	% UNITS BILLED IN <u>EA. BLOCK</u>	UNITS BILLED IN <u>EA. BLOCK</u>
<u>DEMAND CHARGE:</u>				
0 - 500 KW	7.04	6.54	6.54	21,831
501 - 1500 KW	21.12	18.04	11.50	38,387
> 1500 KW		100.0	81.96	273,584
TOTAL			100.00	333,802
<u>ENERGY CHARGE:</u>				
0 - 200 KWH/KW				63,706
201 - 400 KWH/KW				57,451
> 400 KWH/KW				57,554
TOTAL				178,711
<u>FORECASTS:</u>				
SALES, MWH	178,711			
BILLS	47			
KW	333,802			
KWH/BILL	3,802,362			
KW/BILL	7,102			

HAWAIIAN ELECTRIC COMPANY, INC.  
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE  
DOCKET NO. 2008-0083 TEST-YEAR: 2009

DETERMINATION OF POWER FACTOR ADJUSTMENT

	Recorded
KWH	179781254
KVARHR	26978195
POWER FACTOR	98.8927
	<u>Present Rates</u>
CALCULATED PF (%)	99
BASE PF (%)	<u>85</u>
DIFFERENCE	(14.0)
ADJ. FOR EA. 1% DIFF.	0.001
PF ADJUSTMENT RATE	(0.014)
TOTAL DMD/ENERGY CHARGES	\$23,920.8
POWER FACTOR ADJ.	(\$334.9)

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>Bills</u>	<u>\$/month</u>	
Customers	5,292	20.00	\$105.8
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 150 KWH/KW	18,713	18.6161	\$3,483.6
> 150 KWH/KW	18,788	14.6421	\$2,751.0
SUBTOTAL	<u>37,500</u>		<u>\$6,234.6</u>
<u>ADJUSTMENTS:</u>			
MINIMUM BILL			\$0.6
SCHEDULE E ADJUSTMENT			\$0.0
SECONDARY METERING ADJUSTMENT:			\$13.4
SUBTOTAL			<u>\$14.0</u>
<u>TOTAL BASE REVENUE:</u>			<u>\$6,354.4</u>
FUEL OIL ADJUSTMENT:		7.221 ¢/kWh	\$2,707.9
<u>TOTAL REVENUE AT PRESENT RATES</u>			<u>\$9,062.3</u>
2007 INTERIM RATE INCREASE		7.23%	\$459.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$9,521.7</u>

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUES

	<u>PRESENT RATES</u>		
	<u>BILLING UNITS</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
<u>CUSTOMER CHARGE:</u>	<u>Bills</u>	<u>\$/month</u>	
Customers	5,292	20.00	\$105.8
<u>ENERGY CHARGE:</u>	<u>MWH</u>	<u>¢/kWh</u>	
0 - 150 KWH/KW	18,713	18.6161	\$3,483.6
> 150 KWH/KW	18,788	14.6421	\$2,751.0
SUBTOTAL	<u>37,500</u>		<u>\$6,234.6</u>
<u>ADJUSTMENTS:</u>			
MISCELLANEOUS **			\$14.0
FUEL OIL ADJUSTMENT:		7.221 ¢/kWh	\$2,707.9
TOTAL REVENUES			<u>\$9,062.3</u>
2007 INTERIM RATE INCREASE REVENUES		7.23%	\$459.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			<u>\$9,521.7</u>

\*\* INCLUDES Minimum Bill Adj., Secondary Metering Adj.

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

DETERMINATION OF TEST-YEAR BILLING LOADS

<u>TOTAL F</u>	<u>RECORDED</u>	<u>FORECASTS</u>
SALES, MWH	37,579.6	37,500
BILLED KW	120,871.4	120,614
KWH/KW	310.91	310.91
NUMBER OF BILLS	5,211	5,292
<u>SECONDARY METERING</u> (with % surcharge)		
SALES, MWH	5,434.4	5,438
% OF TOTAL	14.5	14.5
BILLED KW	15,879.2	15,890
KWH/KW	342.23	342.23
NUMBER OF BILLS	900	916
% OF TOTAL	17.3	17.3

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

DETERMINATION OF TEST-YEAR BILLING LOADS

<u>BILLING BLOCKS:</u>	CUM AT EA. UPPER LIMIT AS % <u>OF TOTAL</u>	PERCENT OF UNITS BILLED IN EACH <u>BLOCK</u>	MWH BILLED IN EACH <u>BLOCK</u>
0 - 150 KWH/KW	49.9	49.9	18,713
> 150 KWH/KW	<u>100.0</u>	<u>50.1</u>	<u>18,788</u>
TOTAL		100.0	37,500

SECONDARY METERING:

0 - 150 KWH/KW	43.8	43.8	2,382
> 150 KWH/KW	<u>100.0</u>	<u>56.2</u>	<u>3,056</u>
TOTAL		100.0	5,438



HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

DETERMINATION OF TEST-YEAR BILLING LOADS  
FOR MINIMUM CHARGE PROVISION

	<u>PRESENT RATES</u>
MIN CHRG less Cust CHRG.,\$/MO.	35.00
BASE ENERGY ,\$/KWH	0.186161
F.O.A., \$/KWH	0.07221
MINIMUM KWH/MO.	135.46

	<u>PRESENT RATES</u>	
	<u>RECORDED</u>	<u>FORECAST</u>
<u>SALES, MWH</u>		
TOTAL F	37,580	37,500
LT/EQ TO MIN. KWH	3.672	3.8
% OF TOTAL	0.010	0.010

<u>NUMBER OF BILLS</u>		
TOTAL F	5,211	5,292
LT/EQ TO MIN. KWH	44	45
% OF TOTAL	0.844	0.844

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR MINIMUM CHARGE PROVISION

	<u>PRESENT RATES</u>		
	<u>UNITS BILLED</u>	<u>UNIT PRICE</u>	<u>REVENUES \$1000S</u>
IF NO PROVISION FOR MINIMUM CHRG.:	<u>(MWH)</u>	<u>¢/kWh</u>	
BASE ENERGY CHARGE	3.8	18.6161	\$0.7
FUEL OIL ADJUSTMENT:	3.8	7.221	<u>\$0.3</u>
TOTAL, IF NO MIN CHRG.			\$1.0
	<u>BILLS</u>	<u>\$/Month</u>	
AS BILLED WITH MINIMUM CHARGE:	45	35.00	<u>\$1.6</u>
MINIMUM BILL ADJ.:			\$0.6

HAWAIIAN ELECTRIC COMPANY, INC.  
DOCKET NO. 2008-0083, Test-Year 2009  
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE  
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATES OF TEST-YEAR REVENUE ADJUSTMENTS  
FOR SECONDARY METERING

	<u>PRESENT RATES</u>		
ENERGY REVENUES	<u>UNITS BILLED (MWH)</u>	<u>UNIT PRICE CENTS/KWH</u>	<u>REVENUES \$1000S</u>
ENERGY CHARGE:			
0 - 150 KWH/KW	2,382	18.6161	\$443.4
> 150 KWH/KW	<u>3,056</u>	14.6421	<u>\$447.5</u>
SUBTOTAL	5,438		\$890.9
TOTAL ENERGY REVENUES			<u>\$890.9</u>
SEC. METERING % ADJUSTMENT:		1.5%	\$13.4

**HAWAIIAN ELECTRIC COMPANY, INC.**  
**DOCKET NO. 2008-0083**  
**TEST YEAR 2009**

**SCHEDULE H REVENUE ALLOCATIONS TO SCHEDULE J AND G**

<u>Schedule H Bills</u>				<u>Schedule H kWh</u>		
< 5,000 kWh	6,183	68.57%	to Sched G	< 5,000 kWh	14,692	33.36%
> 5,000 kWh	2,834	31.43%	to Sched J	> 5,000 kWh	29,346	66.64%
	<u>9,017</u>	<u>100.00%</u>			<u>44,038</u>	<u>100.00%</u>

**ALLOCATION OF SCHEDULE H REVENUES**

	<u>Schedule H</u>	<u>Schedule G</u>	<u>Schedule J</u>
Customer Charge	\$ 317.7	\$ 217.8	\$ 99.9
Energy Charge	\$ 4,526.3	\$ 1,510.1	\$ 3,016.2
Demand Charge	\$ 517.5	\$ 172.7	\$ 344.8
Base Revenues	\$ 5,361.5	\$ 1,900.6	\$ 3,460.9
ECAF	\$ 2,433.5	\$ 811.9	\$ 1,621.6
Present Revenues	\$ 7,795.0	\$ 2,712.5	\$ 5,082.5
2007 Interim	<u>\$ 388.2</u>	<u>\$ 137.6</u>	<u>\$ 250.6</u>
Current Effective Revenues	\$ 8,183.2	\$ 2,850.1	\$ 5,333.1

Customer Charge, Energy Charge, Demand Charge, ECAF and 2007 Interim for Shedule H from HECO-WP-302

**REVISED G AND J REVENUES @ PROPOSED RATE DESIGN**

	<u>Schedule G</u>	<u>Schedule J</u>
Present Revenues	\$ 103,104.1	\$ 484,536.1
Allocated H Prsnt Rev.	<u>\$ 2,712.5</u>	<u>\$ 5,082.5</u>
Adj. Present Revenues	\$ 105,816.6	\$ 489,618.6
2007 Interim	\$ 5,318.5	\$ 19,900.4
Allocated H 2007 Interim	<u>\$ 137.6</u>	<u>\$ 250.6</u>
Adj. Current Effective	\$ 111,272.7	\$ 509,769.6

Present Revenues and 2007 Interim from HECO-WP-302

**HAWAIIAN ELECTRIC COMPANY, INC.**  
**DOCKET NO. 2008-0083**  
**TEST YEAR 2009**

**ALLOCATION OF SCHEDULE PS, PP, PT REVENUES**

	<u>Schedule PS</u>	<u>Present Schedule PP</u>	<u>Schedule PT</u>	<u>Total</u>
Base Revenues	\$ 128,887.6	\$ 275,734.2	\$ 23,604.7	\$ 428,226.5
ECAF	<u>\$ 62,992.5</u>	<u>\$ 142,826.8</u>	<u>\$ 12,904.7</u>	<u>\$ 218,724.0</u>
Present Revenues	\$ 191,880.1	\$ 418,561.0	\$ 36,509.4	\$ 646,950.5
2007 Interim	<u>\$ 9,620.3</u>	<u>\$ 12,780.4</u>	<u>\$ 1,548.5</u>	<u>\$ 23,949.2</u>
Current Effective Revenues	\$ 201,500.4	\$ 431,341.4	\$ 38,057.9	\$ 670,899.7

Present Base Revenues, ECAF, and 2007 Interim from HECO-WP-302

	<u>Schedule DS</u>	<u>Proposed Schedule P-New</u>	<u>Total</u>
Base Revenues	\$ 165,661.3	\$ 262,565.2	\$ 428,226.5
ECAF	<u>\$ 87,329.9</u>	<u>\$ 131,394.1</u>	<u>\$ 218,724.0</u>
Present Revenues	\$ 252,991.2	\$ 393,959.3	\$ 646,950.5
2007 Interim	<u>\$ 4,162.3</u>	<u>\$ 19,786.9</u>	<u>\$ 23,949.2</u>
Current Effective Revenues	\$ 257,153.5	\$ 413,746.2	\$ 670,899.7

**Index of Workpapers for HECO Rate Case - Direct Testimony**  
TEST YEAR 2009

Header	Page(s)	Description
HECO - WP - 400	1	Index
HECO - WP - 403	1	Company Use (5-yr historical)
HECO - WP - 403	2	Unaccounted For and System Losses (5-yr historical)
HECO - WP - 406	1	Generating Unit Load Carrying Capabilities
HECO - WP - 406	2	Generating Unit Heat Rate Constants
HECO - WP - 406	3	Equivalent Forced Outage Rates
HECO - WP - 407	1	Sales Fuel Efficiency
HECO - WP - 408	1	Historical Net Heat Rate (HECO)
HECO - WP - 409	2	2009 Production Simulation-Consumption
HECO - WP - 412	1-6	Raw Output From Production Simulation Model
HECO - WP - 413	1-60	Raw Output From Production Simulation Model (monthly file)
HECO - WP - 414	1-4	Input File Into the Production Simulation
HECO - WP - 414	5-6	Fuel Input File Into Production Simulations
HECO - WP - 414	7-10	Unit costs/Performance/Maintenance Files
HECO - WP - 414	11	As-available Input File
HECO - WP - 414	12-17	Load Input File
HECO - WP - 414	18	QLPU Input File
HECO - WP - 414	19	Spinning Reserve Input File
HECO - WP - 414	20-30	Pattern Files

Hawaiian Electric Company, Inc.

TEST YEAR 2009 COMPANY USE

Line	Year	(A) Company No-Charge (MWh)	(B) Sales (MWh)	(C) = (A) ÷ (B) (C) Company Use (Percent)
1.	2003	15,002	7,522,230	0.199%
2.	2004	15,521	7,732,834	0.201%
3.	2005	15,698	7,721,296	0.203%
4.	2006	17,363	7,700,605	0.225%
5.	2007	16,813	7,675,355	0.219%
6.	Total	80,396	38,352,319	0.210%
7.	Average	16,079		

Hawaiian Electric Company, Inc.

TEST YEAR 2009 UNACCOUNTED FOR & SYSTEM LOSSES

Line	Year	(A) Unacct'd & Sys Losses (MWh)	(B) Net-to-System (MWh)	(C) = (A) ÷ (B) (C) System Losses (Percent)
1.	2003	371,726	7,908,957	4.70%
2.	2004	378,644	8,126,998	4.66%
3.	2005	367,309	8,104,303	4.53%
4.	2006	386,904	8,104,872	4.77%
5.	2007	396,947	8,089,115	4.91%
6.	Total	1,901,529	40,334,244	4.71%



**Hawaiian Electric Company, Inc.**

**TEST YEAR 2009 GENERATING UNIT LOAD CARRYING CAPABILITIES**

<b>Unit</b>	<b>(A) Operating Minimum (Net MW)</b>	<b>(B) Normal Top Load (Net MW)</b>
Honolulu 8	22.3	53.4
Honolulu 9	22.3	54.4
Waiau 3	22.3	46.6
Waiau 4	22.3	46.6
Waiau 5	22.5	54.5
Waiau 6	22.5	53.5
Waiau 7	32.6	82.9
Waiau 8	32.8	86.1
Waiau 9	5.9	52.9
Waiau 10	5.9	49.9
Kahe 1	32.5	82.1
Kahe 2	32.7	82.1
Kahe 3	32.3	86.1
Kahe 4	32.3	85.3
Kahe 5	50.7	134.3
Kahe 6	50.0	134.4
CIP1	39.0	113.0
Kalaeloa CT1	32.5	90.0
Kalaeloa CT2	32.5	90.0
Kalaeloa Additional Capacity	0.1	28.0
AES-Hawaii	63.0	180.0
H-POWER	25.0	46.0

**Hawaiian Electric Company, Inc.**

**TEST YEAR 2009 HEAT RATE CONSTANTS**

<b>Unit</b>	<b>A Coefficient</b>	<b>B Coefficient</b>	<b>C Coefficient</b>
Honolulu 8	36.4132	10.3115	0.00568
Honolulu 9	69.8920	8.9484	0.02204
Waiau 3	146.5394	4.8113	0.08544
Waiau 4	49.4604	9.3112	0.03203
Waiau 5	61.0595	8.8137	0.02981
Waiau 6	64.1104	8.7407	0.03199
Waiau 7	88.2107	7.9405	0.01961
Waiau 8	86.8712	8.0919	0.01315
Waiau 9	198.6939	7.8497	0.02922
Waiau 10	191.3958	7.2757	0.02851
Kahe 1	73.4991	8.1733	0.01292
Kahe 2	46.0037	9.0952	0.00350
Kahe 3	57.4864	8.5169	0.00634
Kahe 4	75.5539	8.4394	0.00739
Kahe 5	89.3444	8.6434	0.00305
Kahe 6	117.0609	8.1819	0.00769
CIP1	317.8768	8.8242	0.00074
Kalaeloa CT1	299.0258	4.4054	0.00931
Kalaeloa CT2	299.0258	4.4054	0.00931
Kalaeloa Additional Capacity	0.0000	8.6178	0.00000
AES-Hawaii	258.7479	14.9713	0.00510
H-POWER	10.0000	8.2000	0.00010

**Hawaiian Electric Company, Inc.**

**TEST YEAR 2009 EQUIVALENT FORCED OUTAGE RATE**

<b>Unit</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Forward- Looking</b>
<b>Honolulu 8</b>	13.0%	23.7%	1.7%	3.1%	2.0%	11.7%
<b>Honolulu 9</b>	20.0%	1.0%	12.0%	26.1%	25.3%	11.7%
<b>Waiau 3</b>	10.9%	24.7%	42.2%	24.0%	19.6%	27.7%
<b>Waiau 4</b>	3.4%	13.4%	5.0%	27.2%	7.9%	13.1%
<b>Waiau 5</b>	4.1%	1.0%	1.0%	1.7%	4.3%	3.7%
<b>Waiau 6</b>	2.8%	0.3%	2.6%	9.2%	11.2%	3.7%
<b>Waiau 7</b>	0.7%	1.2%	0.6%	1.1%	4.2%	6.3%
<b>Waiau 8</b>	0.0%	7.7%	23.5%	18.5%	3.9%	6.3%
<b>Waiau 9</b>	6.9%	63.2%	69.2%	14.7%	11.7%	11.5%
<b>Waiau 10</b>	36.0%	4.4%	7.4%	26.3%	7.6%	11.5%
<b>Kahe 1</b>	1.2%	2.6%	5.4%	1.6%	0.4%	3.0%
<b>Kahe 2</b>	2.2%	2.9%	2.0%	0.9%	7.5%	3.0%
<b>Kahe 3</b>	3.5%	8.8%	8.3%	2.1%	6.2%	6.3%
<b>Kahe 4</b>	1.3%	1.4%	4.9%	1.4%	6.1%	6.3%
<b>Kahe 5</b>	1.1%	7.6%	3.1%	3.1%	2.5%	4.1%
<b>Kahe 6</b>	1.9%	3.3%	5.9%	2.8%	0.4%	3.1%
<b>CIP1</b>						4.0%
<b>Kalaeloa</b>						1.5%
<b>AES-Hawaii</b>	(See Mr. Dan Ching's Testimony, HECO T-6)					1.5%
<b>H-POWER</b>						11.6%

Hawaiian Electric Company, Inc.

TEST YEAR 2009 SALES FUEL EFFICIENCY

Line	Description	(D)=(C)÷(A)x1000			
		(A) Net Generation (MWh)	(B) <sup>1</sup> Fuel (Barrels)	(C) Fuel (MBtu)	(D) Net Heat Rate (Btu/kWh)
1.	Steam	4,669,532	7,943,375	49,248,926	10,547
2.	Diesel - Central Station	31,012	124,139	727,455	23,457
3.	Biodiesel	1,824	7,020	35,087	19,236
4.	Diesel - DG	(Treated Separately In the ECAF)			
5.	Total	4,702,368	8,074,534	50,011,467	10,635

SALES PROVIDED BY COMPANY GENERATION

6.	Test Year Sales	7,657,800
7.	Company Generated	58.39%
8.	Sales Provided by Company	4,471,487

SALES FUEL EFFICIENCY

	Company Sales	Company MBtu Consumed
9.	Company Sales and Fuel	4,471,487
10.	Sales Heat Rate	0.011185

<sup>1</sup> Steam's LSFO heat content is 6.2 MBtu/barrel  
Diesel's heat content is 5.86 MBtu/barrel  
Biodiesel's heat content is 4.998 MBtu/barrel

Hawaiian Electric Company, Inc.

HISTORICAL NET HEAT RATE (HECO)

Line	Description	(A) 2003	(B) 2004	(C) 2005	(D) 2006	(E) 2007
1.	Total Fuel Consumed (MBtu)					
2.	Steam	48,441,659	51,453,940	49,790,662	50,945,072	51,097,136
3.	Diesel	359,213	785,235	678,309	380,545	449,607
4.	Diesel - DG			4,794	48,434	108,576
5.	Total	48,800,872	52,239,176	50,473,765	51,374,051	51,655,318
6.	Net Energy Generated (MWh)					
7.	Steam	4,651,903	4,881,864	4,688,606	4,833,363	4,828,024
8.	Diesel	17,040	36,819	32,324	16,752	12,299
9.	Diesel - DG			476	4,728	10,316
10.	Total	4,668,942	4,918,684	4,721,406	4,854,844	4,850,639
11.	Heat Rate (Btu/kWh)					
12.	Steam	10,413	10,540	10,620	10,540	10,583
13.	Diesel	21,081	21,327	20,985	22,716	36,556
14.	Diesel - DG			10,081	10,243	10,525
15.	Total	10,452	10,621	10,690	10,582	10,649
16.	Central Station	10,452	10,621	10,690	10,582	10,649

# Hawaiian Electric Company, Inc.

## 2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)

Month	Simulated										Calibrated			
	Bbl Consumption						Bbl Consumption				1.1	1.1		
	Kahe	Waiau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Sub DG	Kahe	Waiau	Honolulu			WPP Diesel	CIP Diesel
Jan	402,799	170,594	19,907	3,336	-	-	-	408,035	171,106	19,688	4,013	-	-	-
Feb	392,452	140,409	30,315	3,981	-	-	-	397,554	140,830	29,982	4,789	-	-	-
Mar	446,512	136,903	23,699	2,001	-	-	-	452,317	137,314	23,438	2,407	-	-	-
Apr	487,185	181,069	33,963	6,984	-	-	-	493,518	181,612	33,589	8,402	-	-	-
May	473,696	193,155	37,156	4,803	-	-	-	479,854	193,734	36,747	5,778	-	-	-
Jun	451,284	165,203	29,900	3,442	-	-	-	457,151	165,699	29,571	4,141	-	-	-
Jul	464,300	182,099	23,328	7,805	-	-	-	470,336	182,645	23,071	9,389	-	-	-
Aug	480,601	186,400	38,916	2,885	21,399	-	-	486,849	186,959	38,488	3,471	23,539	-	-
Sep	481,456	179,966	35,763	1,550	16,248	-	-	487,715	180,506	35,370	1,865	17,873	-	-
Oct	523,576	152,566	31,358	1,580	14,000	-	-	530,382	153,024	31,013	1,901	15,400	-	-
Nov	448,100	172,867	15,625	1,603	16,618	-	-	453,925	173,386	15,453	1,928	18,280	-	-
Dec	468,516	158,943	8,581	801	-	6,382	-	474,607	159,420	8,487	964	-	7,020	-
Total	5,520,477	2,020,174	328,511	40,771	68,265	6,382	9,571	5,592,243	2,026,235	324,897	49,048	75,092	7,020	9,571

Month	Derived										Calibrated		
	Kahe	Waiau	Mbtu Consumption			Total	Kahe	Waiau	Mbtu Consumption			Total	
			Honolulu	WPP	Diesel				Honolulu	WPP	Diesel		CIP
Jan	2,497,354	1,057,683	123,423	19,549	-	3,698,009	2,529,819	1,060,856	122,066	23,517	-	3,736,258	
Feb	2,433,202	870,536	187,953	23,329	-	3,515,020	2,464,834	873,147	185,886	28,064	-	3,551,931	
Mar	2,768,374	848,799	146,934	11,726	-	3,775,833	2,804,363	851,345	145,318	14,106	-	3,815,132	
Apr	3,020,547	1,122,628	210,571	40,926	-	4,394,672	3,059,814	1,125,996	208,254	49,234	-	4,443,298	
May	2,936,915	1,197,561	230,367	28,146	-	4,392,989	2,975,095	1,201,154	227,833	33,859	-	4,437,941	
Jun	2,797,961	1,024,259	185,380	20,170	-	4,027,770	2,834,334	1,027,331	183,341	24,265	-	4,069,271	
Jul	2,878,660	1,129,014	144,634	45,737	-	4,198,045	2,916,083	1,132,401	143,043	55,022	-	4,246,548	
Aug	2,979,726	1,155,680	241,279	16,906	125,398	4,518,990	3,018,463	1,159,147	238,625	20,338	137,938	4,574,511	
Sep	2,985,027	1,115,789	221,731	9,083	95,213	4,426,843	3,023,833	1,119,137	219,292	10,927	104,735	4,477,922	
Oct	3,246,171	945,909	194,420	9,259	82,040	4,477,799	3,288,371	948,747	192,281	11,138	90,244	4,530,782	
Nov	2,778,220	1,071,775	96,875	9,394	97,381	4,053,645	2,814,337	1,074,991	95,809	11,300	107,120	4,103,557	
Dec	2,904,799	985,447	53,202	4,694	-	3,980,039	2,942,562	988,403	52,617	5,647	35,087	4,024,315	
Total	34,226,957	12,525,079	2,036,768	238,918	400,033	49,459,653	34,671,908	12,562,654	2,014,364	287,418	440,036	50,011,467	
Sub DG						56,084						56,084	
HECO w/ DG						49,515,736						50,067,551	

LSFO heat content = 6.2 million BTU per barrel  
 Diesel heat content = 5.86 million BTU per barrel  
 Biodiesel heat content = 4.998 million BTU per barrel

CIP1 in-service from August 1, 2009.  
 CIP1 fuel type changes from Diesel to Biodiesel on December 1, 2009.

**Hawaiian Electric Company, Inc.**  
**2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)**

**Calibration Factor Reference**

<b><u>Item</u></b>	<b><u>2009TY Factor</u></b>	<b><u>Source</u></b>
Kahe	1.013	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
Waiau	1.003	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
Honolulu	0.989	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
WPP Diesel	1.203	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
CIP Diesel	1.1	Estimated value (new unit to be installed in 2009)
Biodiesel	1.1	Estimated value (new unit to be installed in 2009)

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Case Name: h09tyd10  
Simulation Period: 2009/ 1 - 2009/12

File	Name
Study Data:	h09tyd0.stu
Report Control:	h09tyd0.rfc
Area Data:	h09tyd0.ara
Plant Data:	h09tyd1.plt
Fuel Class Data:	h09tyd4.fcl
Spot Fuel Data:	h09tyd4.sfu
Contract Fuel Data:	
Thermal Basic Data:	h09tyd0.uba
Thermal Cost Data:	h09tyd6.ucs
Thermal Performance Data:	h09tyd4.upf
Thermal NOx Data:	
Hourly Pattern # 1:	ptn1.hcp
Hourly Pattern # 2:	ptn2.hcp
Hourly Pattern # 3:	ptn3.hcp
Hourly Pattern # 4:	ptn4.hcp
Hourly Pattern # 5:	ptn5.hcp
Hydro Data:	
Pumped Storage Data:	
Fixed Energy Transaction Data:	h09tyd4.trf
Hourly Transaction # 2:	ptn2.htr
Economy Transaction Data:	
DSM Data:	
Monte Carlo Scenario Data:	h09tyd10.mcs
Thermal Maintenance Data:	h09tyd0.unt
Hydro Maintenance Data:	
P-S Maintenance Data:	
Load Data:	h09tyd10.eei
CC Data #1:	
CC Data #2:	
CC Data #3:	
CC Data #4:	
CC Maintenance Data:	
Quick Load Pick Up Curve Data:	h09tyd0.qlp
Spinning Reserve Data:	h09tyd0.spn

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Calendar Year: 2009

Monthly system Load and Capacity Summary

Mnth	Peak Load MW	Mnthly Energy GWh	Load Factor %	Installed Capacity MW	Maint outage MW	Adjusted Capacity MW	Capacity Reserve MW	Capacity Reserve %
Jan	1165	643	74.2	1648.6	187.8	1460.8	295.8	25.39
Feb	1169	588	74.8	1648.6	187.9	1460.7	291.7	24.95
Mar	1155	647.5	75.4	1648.6	53.5	1595.1	440.1	38.11
Apr	1167	633.7	75.4	1530.6	53.5	1477.1	310.1	26.57
May	1190	671.9	75.9	1602.6	82.1	1520.5	330.5	27.77
Jun	1192	673.2	78.4	1625.6	82.1	1543.5	351.5	29.49
Jul	1229	700.2	76.6	1648.6	136.5	1512.1	283.1	23.04
Aug	1268	728.2	77.2	1761.6	128.7	1632.9	364.9	28.78
Sep	1256	708.5	78.4	1761.6	136.6	1625	369	29.38
Oct	1274	716.6	75.6	1761.6	86.1	1675.5	401.5	31.52
Nov	1262	671	73.8	1761.6	139.5	1622.1	360.1	28.54
Dec	1216	671.7	74.2	1738.6	187.7	1550.9	334.9	27.54

Summary for Period:  
Peak Load (MW): 1274  
Total Energy (GWh): 8053.56  
Load Factor (%): 72.16

Month	AM Peak (MW)	PM Peak (MW)	Capacity (MW)	Maint. (MW)	Reserve (MW)	Largest (MW)	LSC (MW)	Diff. (MW)
Jan	1091	1165	1648.6	187.8	295.8	180	1280.8	115.8
Feb	1075	1169	1648.6	187.9	291.7	180	1280.7	111.7
Mar	1102	1155	1648.6	53.5	440.1	180	1415.1	260.1
Apr	1133	1167	1530.6	53.5	310.1	180	1297.1	130.1
May	1162	1190	1602.6	82.1	330.5	180	1340.5	150.5
Jun	1160	1192	1625.6	82.1	351.5	180	1363.5	171.5
Jul	1185	1229	1648.6	136.5	283.1	180	1332.1	103.1
Aug	1225	1268	1761.6	128.7	364.9	180	1452.9	184.9
Sep	1214	1256	1761.6	136.6	369	180	1445	189
Oct	1187	1274	1761.6	86.1	401.5	180	1495.5	221.5
Nov	1197	1262	1761.6	139.5	360.1	180	1442.1	180.1
Dec	1136	1216	1738.6	187.7	334.9	180	1370.9	154.9

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Fiscal Year: 2009

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M\$	Fuel Cst M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	3754.5	18.88	88.362	1105.9	240	0	0	18.2691	0	0	198.22	206.75	12516
2 Honolu 9	54.4	1	2859.5	14.91	71.081	930.9	279	0	0	15.3774	0	0	204	216.34	13096
3 Waiuu 3	46.6	1	1216.6	9.48	38.711	526.2	164	0	0	8.4289	0	0	194.91	217.74	13593
4 Waiuu 4	46.6	1	2111.6	11.95	48.822	679.7	248	0	0	10.8882	0	0	195.58	223.02	13923
5 Waiuu 5	54.5	1	4610.6	23.03	110.033	1424.1	330	0	0	22.8126	0	0	194.03	207.32	12943
6 Waiuu 6	53.5	1	3433.3	17.5	82.076	1079.5	277	0	0	17.2922	0	0	195.7	210.69	13153
7 Waiuu 7	82.9	1	8207	50.4	366.2	3993.6	4	0	0	63.9724	0	0	173.8	174.69	10906
8 Waiuu 8	86.1	1	7685.3	61.18	461.703	4821.9	5	0	0	77.2391	0	0	166.45	167.29	10444
9 Waiuu 9	52.9	1	309.4	0.63	2.933	87.2	66	0	0	2.0633	0	0	697.65	703.53	29744
10 Waiuu 10	49.9	1	585.2	1.13	4.932	151.7	109	0	0	3.5879	0	0	721.66	727.42	30754
11 Kahe 1	82.1	1	7009.4	48.64	350.031	3634.9	3	0	0	58.2259	0	0	165.61	166.34	10385
12 Kahe 2	82.1	1	7010.6	54.81	394.378	4013.5	3	0	0	64.2906	0	0	162.36	163.02	10177
13 Kahe 3	86.1	1	7737.8	73.03	551.138	5429.4	5	0	0	86.9708	0	0	157.09	157.8	9851
14 Kahe 4	85.3	1	7826.4	71.29	532.982	5401.8	5	0	0	86.5286	0	0	161.6	162.35	10135
15 Kahe 5	134.3	1	7872.5	78.01	918.227	9001	4	0	0	144.1831	0	0	156.72	157.02	9803
16 Kahe 6	134.4	1	7373.5	55.67	655.792	6746.4	3	0	0	108.0667	0	0	164.02	164.79	10287
17 Kala CC	90	1	6600.7	74.71	589.336	5060.9	92	0	0	86.5132	0	0	146.8	146.8	8587
18 Kala CC	90	1	8408.4	94.87	748.352	6433.3	8	0	0	109.9737	0	0	146.95	146.95	8597
19 AES	180	1	8627	96.95	1529.475	26524.3	2	0	0	43.8555	0	0	28.67	28.67	17342
20 HPOWER	46	1	7434.2	82.04	330.751	2787.6	7	0	0	0	0	0	0	0	8428
21 Kala CC	28	1	6603	58.09	142.574	1228.7	92	0	0	21.0036	0	0	147.32	147.32	8618
22 CIP1	113	1	626	2.52	24.971	431.9	94	0	0	10.9436	0	0	426.2	438.25	17297
23 D6 Sub1	9.8	1	381	2.27	1.96	20.4	80	0	0	0.4899	0	0	249.93	249.93	10409
24 D6 Sub2	9.8	1	347.6	2.07	1.783	18.6	78	0	0	0.4456	0	0	249.93	249.93	10409
25 D6 Sub3	9.8	1	316	1.9	1.642	17.1	73	0	0	0.4104	0	0	249.93	249.93	10409
System					8048.243	91550	2272	0	0	1061.8323	0	0	130.73	131.93	11375

□

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Fiscal Year: 2009

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost \$/MWh
1	Non-Firm	CONSTANT PURC	4.771	0.3085	0	0.3085	64.66
2	ArcherPV	HOURLY PURC	0.305	0	0	0	0

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PPC Proprietary Program Licensed to HECO Till 12/2099 HECO PMONTH V.20070111  
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Fiscal Year: 2009

Fuel Type Summary

Type	Energy GWh	Fuel Unit	MBtu Unit	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu	
Spot:								
1 WLSFO	1107.544	2020.173 Bbl		12525.1	200.6333	181.15	11309	1601.85
2 KLSFO	3402.547	5520.478 Bbl		34227	548.2657	161.13	10059	1601.85
3 HLSFO	159.443	328.51 Bbl		2036.8	33.6465	211.03	12774	1651.96
4 DG SUB	5.385	9.566 Bbl		56.1	1.3459	249.93	10409	2401.05
5 WBIESEL	7.865	40.772 Bbl		238.9	5.6513	718.51	30377	2365.31
6	0	0 Bbl		0	0	0	0	0
7 AES	1529.475	26524.305 Bbl		26524.3	43.8555	28.67	17342	165.34
8 KALAELOA	1480.262	2120.473 Bbl		12722.8	217.4906	146.93	8595	1709.45
9 BIODIESEL	24.971	74.646 Bbl		373.2	10.9436	438.25	14946	2932.15
10 REFUSE	330.751	449.617 Bbl		2787.6	0	0	8428	0
11	0	0 Bbl		0	0	0	0	0
12 CDIESEL	0	0 Bbl		0	0	0	0	0

Fuel Class Summary

Class	Energy GWh	Fuel Unit	MBtu Unit	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	4669.535	7869.161 Bbl	48788.8	782.5456	167.59	10448	1603.9
2 DIESEL	7.865	40.772 Bbl	238.9	5.6513	718.51	30377	2365.3
4 AES	1529.475	26524.305 Bbl	26524.3	43.8555	28.67	17342	165.3
5 KALAELOA	1480.262	2120.473 Bbl	12722.8	217.4906	146.93	8595	1709.5
6 BIODIESEL	24.971	74.646 Bbl	373.2	10.9436	438.25	14946	2932.2
7 REFUSE	330.751	449.617 Bbl	2787.6	0	0	8428	0
9 DG SUB	5.385	9.566 Bbl	56.1	1.3459	249.93	10409	2401.1

□

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PPC Proprietary Program Licensed to HECO Till 12/2099 HECO PMONTH V.20070111  
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Fiscal Year: 2009

System Energy and Cost Summary

+	Demand			+		Supply --			+
	Cost	Cost	Cost			Cost	Cost	Cost	
+	GWh	M\$	\$/MWh	+		GWh	M\$	\$/MWh	+
+	Load:	8053.64		+		Therml Gen:	8048.24	1061.8324	131.93 +
+	P-S Pumping:	0		+		Hydro Gen:	0	0	0 +
+	P-S Payback:	0		+		P-S Gen:	0	0	0 +
+	F. E. Sale:	0	0	0 +		F. E. Purc:	5.08	0.3085	60.77 +
+	Econ. Sale:	0	0	0 +		Econ. Purc:	0	0	0 +
+	Unit Sale:	0	0	0 +					+
+	Transm Loss:	0		+		Rej. Fuel:		0	+
+	Dsm Load:	0		+		Dsm Reductn:	0		+
+	Dumped Engy:	0	0	0 +		Emerg Purc:	0	0	0 +
+				+		E.U. Energy:	0.24	0.0242	100 +
+				+		Lvl Cost:		0	+
+	Total:	8053.64	0	0 +		Total:	8053.56	1062.165	131.89 +
+				+		System Net:		1062.165	131.89 +
+				+		LOLH(hr):	4.82		+

PPC Proprietary Program Licensed to HECO Till 12/2099 HECO PMONTH V.20070111  
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Fiscal Year: 2009

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000 Ups	Start	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	64.3	3402.5474	34227	23	0	548.2657	0	161.13
2 Waiau	26.9	1115.4094	12764	1203	0	206.2846	0	184.94
3 Kalaeloa	81.2	1480.262	12722.8	192	0	217.4905	0	146.93
4 AES	97	1529.4747	26524.3	2	0	43.8555	0	28.67
5 HPOWER	82.1	330.7506	2787.6	7	0	0	0	0
6 Honolulu	16.9	159.4425	2036.8	520	0	33.6465	0	211.03
8 CIP	6	24.9714	431.9	94	0	10.9436	0	438.25
9 DG Sub	2.1	5.3852	56.1	231	0	1.3459	0	249.93

Fiscal Year: 2009

Yearly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
342.042114	504.642822	215.14534	1061.830322

Study Period: 2009/Jan - 2009/Dec  
Total Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
342.042114	504.642822	215.14534	1061.830322

Year: 2009 Month: Jan

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel Cst M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst M\$	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	143.0	8.16	3.242	41.0	10.	0.	0.0000	0.6774	0.0000	0.0000	0.0000	199.04	208.93
2 Honolulu 9	54.4	1	262.5	15.31	6.200	82.4	27.	0.	0.0000	1.3614	0.0000	0.0000	0.0000	205.68	219.60
3 Waiau 3	46.6	1	90.1	8.12	2.817	39.3	15.	0.	0.0000	0.6303	0.0000	0.0000	0.0000	195.27	223.73
4 Waiau 4	46.6	1	166.7	10.98	3.809	54.6	24.	0.	0.0000	0.8741	0.0000	0.0000	0.0000	195.76	229.50
5 Waiau 5	54.5	1	443.8	25.36	10.291	133.0	29.	0.	0.0000	2.1303	0.0000	0.0000	0.0000	194.69	207.01
6 Waiau 6	53.5	1	346.4	20.16	8.030	106.6	29.	0.	0.0000	1.7074	0.0000	0.0000	0.0000	196.45	212.63
7 Waiau 7	82.9	1	695.0	47.37	29.232	324.8	1.	0.	0.0000	5.2032	0.0000	0.0000	0.0000	174.84	177.99
8 Waiau 8	86.1	1	694.3	58.68	37.608	399.4	1.	0.	0.0000	6.3973	0.0000	0.0000	0.0000	167.57	170.11
9 Waiau 9	52.9	1	23.8	0.47	0.184	6.3	7.	0.	0.0000	0.1499	0.0000	0.0000	0.0000	805.00	815.28
10 Waiau 10	49.9	1	52.9	1.04	0.385	13.2	13.	0.	0.0000	0.3125	0.0000	0.0000	0.0000	804.03	812.59
11 Kahe 1	82.1	1	725.3	55.67	34.020	358.7	1.	0.	0.0000	5.7464	0.0000	0.0000	0.0000	166.34	168.91
12 Kahe 2	82.1	1	720.2	60.58	37.027	383.0	1.	0.	0.0000	6.1348	0.0000	0.0000	0.0000	163.30	165.68
13 Kahe 3	86.1	1	695.8	73.30	46.978	468.0	1.	0.	0.0000	7.4963	0.0000	0.0000	0.0000	157.51	159.57
14 Kahe 4	85.3	1	696.7	69.03	43.832	450.6	1.	0.	0.0000	7.2186	0.0000	0.0000	0.0000	162.48	164.69
15 Kahe 5	134.3	1	709.4	80.28	80.265	791.9	1.	0.	0.0000	12.6852	0.0000	0.0000	0.0000	157.01	158.04
16 Kahe 6	134.4	1	48.0	3.45	3.448	45.1	1.	0.	0.0000	0.7227	0.0000	0.0000	0.0000	166.54	209.63
17 Kala CC	90.0	1	621.0	82.17	55.050	473.8	10.	0.	0.0000	8.0992	0.0000	0.0000	0.0000	147.12	147.12
18 Kala CC	90.0	1	729.8	95.76	64.154	553.7	1.	0.	0.0000	9.4653	0.0000	0.0000	0.0000	147.54	147.54
19 AES	180.0	1	734.4	98.65	132.192	2290.5	1.	0.	0.0000	3.7871	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	658.1	88.40	30.271	254.9	1.	0.	0.0000	1.9332	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	622.2	62.96	13.123	113.1	10.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	26.6	1.84	0.135	1.4	9.	0.	0.0000	0.0337	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	27.1	1.86	0.136	1.4	9.	0.	0.0000	0.0340	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	28.4	2.00	0.147	1.5	9.	0.	0.0000	0.0366	0.0000	0.0000	0.0000	249.93	249.93
System					642.575	7388.	213.	0.	0.0000	82.8370	0.0000	0.0000	0.0000	126.77	128.91

Year: 2009    Month: Jan

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262		64.66
2	ArcherPV	HOURLY	0.020	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Jan

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	91.786	170.594	Bbl	1057.7	16.9426	184.59	11523.	1601.85
2 KLSFO	245.570	402.799	Bbl	2497.4	40.0040	162.90	10170.	1601.85
3 HLSFO	9.442	19.907	Bbl	123.4	2.0389	215.93	13071.	1651.96
4 DG SUB	0.417	0.742	Bbl	4.3	0.1043	249.93	10409.	2401.05
5 WDIESEL	0.568	3.336	Bbl	19.5	0.4624	813.46	34391.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	132.192	2290.510	Bbl	2290.5	3.7871	28.65	17327.	165.34
8 KALAELOA	132.327	190.097	Bbl	1140.6	19.4977	147.34	8619.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.271	41.121	Bbl	254.9	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	346.798	593.300	Bbl	3678.5	58.9854	170.09	10607.	1603.5
2 DIESEL	0.568	3.336	Bbl	19.5	0.4624	813.46	34391.	2365.3
4 AES	132.192	2290.510	Bbl	2290.5	3.7871	28.65	17327.	165.3
5 KALAELOA	132.327	190.097	Bbl	1140.6	19.4977	147.34	8619.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.271	41.121	Bbl	254.9	0.0000	0.00	8422.	0.0
9 DG SUB	0.417	0.742	Bbl	4.3	0.1043	249.93	10409.	2401.1



Year: 2009 Month: Jan

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	642.99			Thermal Gen:	642.57	82.8370128.91		
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.43	0.0262	61.65	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0002100.00		
Total:	642.99	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	643.00	82.8633128.87		
				System Net:		82.8633128.87		
				LOLH(hr):	0.07			

Year: 2009 Month: Jan

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	54.6	245.5699	2497.4	7.	0.0000	40.0040	0.0000	162.90
2 Waiau	26.2	92.3547	1077.2	119.	0.0000	17.4050	0.0000	188.46
3 Kalaeloa	85.5	132.3269	1140.6	21.	0.0000	19.4977	0.0000	147.34
4 AES	98.7	132.1921	2290.5	1.	0.0000	3.7871	0.0000	28.65
5 HPOWER	88.5	30.2715	254.9	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	11.8	9.4420	123.4	38.	0.0000	2.0389	0.0000	215.93
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	1.9	0.4175	4.3	27.	0.0000	0.1043	0.0000	249.93

Year: 2009 Month: Jan

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

	Off Peak	Shoulder Peak	Priority Peak	Total
27.131943	38.668201	17.036716	82.836861	

Year: 2009 Month: Feb

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	370.6	23.67	8.499	107.2	26.	0.	0.0000	1.7703	0.0000	0.0000	0.0000	198.78	208.30
2 Honolulu 9	54.4	1	256.5	16.71	6.111	80.8	25.	0.	0.0000	1.3346	0.0000	0.0000	0.0000	205.43	218.40
3 Waiiau 3	46.6	1	99.9	9.98	3.126	43.4	16.	0.	0.0000	0.6956	0.0000	0.0000	0.0000	195.25	222.50
4 Waiiau 4	46.6	1	174.2	12.79	4.007	56.6	23.	0.	0.0000	0.9073	0.0000	0.0000	0.0000	195.69	226.46
5 Waiiau 5	54.5	1	351.8	22.44	8.222	107.6	28.	0.	0.0000	1.7229	0.0000	0.0000	0.0000	194.52	209.54
6 Waiiau 6	53.5	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	4.7242	0.0000	0.0000	0.0000	174.46	175.17
7 Waiiau 7	82.9	1	630.0	48.39	26.969	294.9	0.	0.	0.0000	5.8947	0.0000	0.0000	0.0000	167.22	167.82
8 Waiiau 8	86.1	1	629.8	60.68	35.125	368.0	0.	0.	0.0000	0.1894	0.0000	0.0000	0.0000	728.95	736.84
9 Waiiau 9	52.9	1	28.9	0.72	0.257	8.0	8.	0.	0.0000	0.3624	0.0000	0.0000	0.0000	748.36	755.64
10 Waiiau 10	49.9	1	59.8	1.43	0.480	15.3	13.	0.	0.0000	5.1395	0.0000	0.0000	0.0000	166.24	166.53
11 Kahe 1	82.1	1	652.1	55.91	30.863	320.8	0.	0.	0.0000	6.8673	0.0000	0.0000	0.0000	157.37	157.81
12 Kahe 2	82.1	1	654.0	63.10	34.831	354.7	0.	0.	0.0000	11.6255	0.0000	0.0000	0.0000	162.24	162.72
13 Kahe 3	86.1	1	631.7	75.17	43.515	428.7	0.	0.	0.0000	3.0683	0.0000	0.0000	0.0000	156.93	157.09
14 Kahe 4	85.3	1	630.0	70.66	40.522	411.6	0.	0.	0.0000	7.4458	0.0000	0.0000	0.0000	164.42	172.78
15 Kahe 5	134.3	1	648.0	81.96	74.007	725.8	0.	0.	0.0000	8.6683	0.0000	0.0000	0.0000	147.35	147.35
16 Kahe 6	134.4	1	210.2	19.65	17.758	191.5	1.	0.	0.0000	3.0075	0.0000	0.0000	0.0000	28.88	28.88
17 Kala CC	90.0	1	569.9	83.70	50.648	435.6	8.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
18 Kala CC	90.0	1	666.5	97.22	58.829	507.1	0.	0.	0.0000	1.7892	0.0000	0.0000	0.0000	147.32	147.32
19 AES	180.0	1	661.7	86.04	104.133	1819.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
20 HPOWER	46.0	1	589.0	87.60	27.092	228.2	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	567.4	64.51	12.145	104.7	8.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	32.8	2.55	0.169	1.8	10.	0.	0.0000	0.0422	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	33.6	2.59	0.171	1.8	10.	0.	0.0000	0.0428	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	22.7	1.73	0.115	1.2	9.	0.	0.0000	0.0287	0.0000	0.0000	0.0000	249.93	249.93
System					587.594	6614.	186.	0.	0.0000	77.6022	0.0000	0.0000	0.0000	130.79	132.07

Year: 2009    Month: Feb

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost \$/MWh	Cost
1	Non-Firm	CONSTANT	0.366	0.0237	0.0000	0.0237	64.67	
2	ArcherPV	HOURLY	0.021	0.0000	0.0000	0.0000	0.00	

Year: 2009 Month: Feb

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	77.448	140.409	Bbl	870.5	13.9447	180.05	11240.	1601.85
2 KLSFO	241.497	392.452	Bbl	2433.2	38.9763	161.39	10075.	1601.85
3 HLSFO	14.610	30.315	Bbl	188.0	3.1049	212.52	12865.	1651.96
4 DG SUB	0.455	0.808	Bbl	4.7	0.1137	249.93	10409.	2401.05
5 WDIESEL	0.737	3.981	Bbl	23.3	0.5518	749.08	31669.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	104.133	1818.981	Bbl	1819.0	3.0075	28.88	17468.	165.34
8 KALAELOA	121.622	174.552	Bbl	1047.3	17.9033	147.20	8611.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	27.092	36.802	Bbl	228.2	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	333.555	563.176	Bbl	3491.7	56.0259	167.97	10468.	1604.6
2 DIESEL	0.737	3.981	Bbl	23.3	0.5518	749.08	31669.	2365.3
4 AES	104.133	1818.981	Bbl	1819.0	3.0075	28.88	17468.	165.3
5 KALAELOA	121.622	174.552	Bbl	1047.3	17.9033	147.20	8611.	1709.4
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	27.092	36.802	Bbl	228.2	0.0000	0.00	8422.	0.0
9 DG SUB	0.455	0.808	Bbl	4.7	0.1137	249.93	10409.	2401.1

Year: 2009 Month: Feb

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	588.00			Thermal Gen:	587.59	77.6022132.07		
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.39	0.0237	61.13	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.01	0.0008100.00		
Total:	588.00	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	587.99	77.6266132.02		
				System Net:		77.6266132.02		
				LOLH(hr):	0.30			

Year: 2009 Month: Feb

Plant Summary

Plant	CF	Energy	MBtu	Start	Stup	Fuel	O&M	Tot
	%	GWh	1000	Ups	Cst	Cst	Cst	Cst
					M\$	M\$	M\$	\$/MWh
1 Kahe	59.5	241.4969	2433.2	2.	0.0000	38.9763	0.0000	161.39
2 Waiau	24.6	78.1851	893.9	88.	0.0000	14.4965	0.0000	185.41
3 Kalaeloa	87.0	121.6222	1047.3	16.	0.0000	17.9033	0.0000	147.20
4 AES	86.1	104.1331	1819.0	0.	0.0000	3.0075	0.0000	28.88
5 HPOWER	87.6	27.0920	228.2	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	20.2	14.6099	188.0	51.	0.0000	3.1049	0.0000	212.52
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	2.3	0.4548	4.7	28.	0.0000	0.1137	0.0000	249.93

Year: 2009 Month: Feb

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
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25.086590	36.508789	16.006615	77.601990

Year: 2009 Month: Mar

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M M\$	FO&M M\$	Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	327.3	18.80	7.472	95.3	28.	0.	0.0000	1.5740	0.0000	0.0000	0.0000	0.0000	198.89	210.65
2 Honolulu 9	54.4	1	162.4	9.45	3.826	51.7	21.	0.	0.0000	0.8533	0.0000	0.0000	0.0000	0.0000	205.81	223.02
3 Waiiau 3	46.6	1	52.5	4.82	1.673	22.8	7.	0.	0.0000	0.3653	0.0000	0.0000	0.0000	0.0000	194.92	218.38
4 Waiiau 4	46.6	1	91.5	6.06	2.101	29.9	13.	0.	0.0000	0.4788	0.0000	0.0000	0.0000	0.0000	195.71	227.91
5 Waiiau 5	54.5	1	270.6	15.44	6.264	84.0	28.	0.	0.0000	1.3456	0.0000	0.0000	0.0000	0.0000	194.76	214.82
6 Waiiau 6	53.5	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.3000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
7 Waiiau 7	82.9	1	698.4	47.09	29.059	318.7	0.	0.	0.0000	5.1059	0.0000	0.0000	0.0000	0.0000	174.90	175.71
8 Waiiau 8	86.1	1	697.4	58.38	37.419	393.4	0.	0.	0.0000	6.3009	0.0000	0.0000	0.0000	0.0000	167.70	168.39
9 Waiiau 9	52.9	1	15.8	0.38	0.150	4.5	3.	0.	0.0000	0.1056	0.0000	0.0000	0.0000	0.0000	699.27	705.35
10 Waiiau 10	49.9	1	28.3	0.62	0.230	7.3	5.	0.	0.0000	0.1718	0.0000	0.0000	0.0000	0.0000	741.16	747.20
11 Kahe 1	82.1	1	720.2	53.53	32.713	341.5	0.	0.	0.0000	5.4700	0.0000	0.0000	0.0000	0.0000	166.79	167.21
12 Kahe 2	82.1	1	721.4	59.70	36.486	373.1	0.	0.	0.0000	5.9773	0.0000	0.0000	0.0000	0.0000	163.47	163.83
13 Kahe 3	86.1	1	698.2	72.21	46.282	457.1	0.	0.	0.0000	7.3225	0.0000	0.0000	0.0000	0.0000	157.71	158.21
14 Kahe 4	85.3	1	386.6	37.65	23.906	243.7	0.	0.	0.0000	3.9044	0.0000	0.0000	0.0000	0.0000	162.75	163.33
15 Kahe 5	134.3	1	714.0	78.75	78.735	773.8	0.	0.	0.0000	12.3944	0.0000	0.0000	0.0000	0.0000	157.26	157.42
16 Kahe 6	134.4	1	716.4	55.89	55.919	579.1	0.	0.	0.0000	9.2768	0.0000	0.0000	0.0000	0.0000	165.39	165.90
17 Kala CC	90.0	1	626.4	81.84	54.831	473.9	9.	0.	0.0000	8.1010	0.0000	0.0000	0.0000	0.0000	147.74	147.74
18 Kala CC	90.0	1	730.8	94.47	63.291	549.1	0.	0.	0.0000	9.3863	0.0000	0.0000	0.0000	0.0000	148.30	148.30
19 AES	180.0	1	731.5	91.98	123.250	2143.8	0.	0.	0.0000	3.5446	0.0000	0.0000	0.0000	0.0000	28.76	28.76
20 HPOWER	46.0	1	660.0	88.66	30.360	255.7	1.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	630.1	61.60	12.840	110.7	9.	0.	0.0000	1.8916	0.0000	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	20.0	1.42	0.104	1.1	5.	0.	0.0000	0.0259	0.0000	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	19.3	1.38	0.101	1.1	5.	0.	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	14.8	1.05	0.077	0.8	4.	0.	0.0000	0.0193	0.0000	0.0000	0.0000	0.0000	249.93	249.93
System					647.088	7312.	140.	0.	0.0000	83.6404	0.0000	0.0000	0.0000	0.0000	128.42	129.26



Year: 2009    Month: Mar

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262		64.66
2	ArcherPV	HOURLY	0.026	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Mar

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	76.515	136.903	Bbl	848.8	13.5965	177.70	11093.	1601.85
2 KLSFO	274.041	446.512	Bbl	2768.4	44.3453	161.82	10102.	1601.85
3 HLSFO	11.298	23.699	Bbl	146.9	2.4273	214.84	13005.	1651.96
4 DG SUB	0.282	0.501	Bbl	2.9	0.0705	249.93	10409.	2401.05
5 WDIESEL	0.380	2.001	Bbl	11.7	0.2774	730.69	30892.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	123.250	2143.807	Bbl	2143.8	3.5446	28.76	17394.	165.34
8 KALAELOA	130.962	188.939	Bbl	1133.6	19.3789	147.97	8656.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.360	41.241	Bbl	255.7	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	361.854	607.114	Bbl	3764.1	60.3691	166.83	10402.	1603.8
2 DIESEL	0.380	2.001	Bbl	11.7	0.2774	730.69	30892.	2365.3
4 AES	123.250	2143.807	Bbl	2143.8	3.5446	28.76	17394.	165.3
5 KALAELOA	130.962	188.939	Bbl	1133.6	19.3789	147.97	8656.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.360	41.241	Bbl	255.7	0.0000	0.00	8422.	0.0
9 DG SUB	0.282	0.501	Bbl	2.9	0.0705	249.93	10409.	2401.1

Year: 2009 Month: Mar

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	647.52			Thermal Gen:	647.09	83.6404129.26		
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.43	0.0262	60.70	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0001100.00		
				Lvl Cost:		0.0000		
Total:	647.52	0.0000	0.00	Total:	647.52	83.6668129.21		
				System Net:		83.6668129.21		
				LOLH(hr):	0.06			

Year: 2009 Month: Mar

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	61.0	274.0409	2768.4	1.	0.0000	44.3453	0.0000	161.82
2 Waiau	21.9	76.8945	860.5	58.	0.0000	13.8739	0.0000	180.43
3 Kalaeloa	84.6	130.9620	1133.6	18.	0.0000	19.3789	0.0000	147.97
4 AES	92.0	123.2497	2143.8	0.	0.0000	3.5446	0.0000	28.76
5 HPOWER	88.7	30.3598	255.7	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	14.1	11.2985	146.9	49.	0.0000	2.4273	0.0000	214.84
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	1.3	0.2821	2.9	13.	0.0000	0.0705	0.0000	249.93

Year: 2009 Month: Mar

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
27.249128	39.385223	17.005875	83.640228

Year: 2009 Month: Apr

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	393.0	24.85	9.559	119.2	26.	0.	0.0000	1.9695	0.0000	0.0000	0.0000	197.53	206.03
2 Honolulu 9	54.4	1	266.0	18.15	7.112	91.4	24.	0.	0.0000	1.5091	0.0000	0.0000	0.0000	201.78	212.17
3 Waiiau 3	46.6	1	133.5	12.96	4.350	58.2	16.	0.	0.0000	0.9317	0.0000	0.0000	0.0000	194.45	214.20
4 Waiiau 4	46.6	1	210.5	14.74	4.949	67.2	20.	0.	0.0000	1.0768	0.0000	0.0000	0.0000	195.36	217.58
5 Waiiau 5	54.5	1	388.5	24.54	9.634	123.9	28.	0.	0.0000	1.9841	0.0000	0.0000	0.0000	193.19	205.96
6 Waiiau 6	53.5	1	270.4	17.41	6.709	87.3	20.	0.	0.0000	1.3982	0.0000	0.0000	0.0000	194.88	208.42
7 Waiiau 7	82.9	1	673.7	52.55	31.386	340.8	0.	0.	0.0000	5.4593	0.0000	0.0000	0.0000	173.32	173.94
8 Waiiau 8	86.1	1	673.4	69.05	42.831	445.3	0.	0.	0.0000	7.1328	0.0000	0.0000	0.0000	166.02	166.53
9 Waiiau 9	52.9	1	55.5	1.56	0.595	16.3	10.	0.	0.0000	0.3854	0.0000	0.0000	0.0000	643.22	647.74
10 Waiiau 10	49.9	1	95.3	2.22	0.797	24.6	15.	0.	0.0000	0.5827	0.0000	0.0000	0.0000	725.71	730.70
11 Kahe 1	82.1	1	697.0	62.33	36.862	380.5	0.	0.	0.0000	6.0955	0.0000	0.0000	0.0000	165.10	165.36
12 Kahe 2	82.1	1	466.3	45.61	26.976	273.5	0.	0.	0.0000	4.3803	0.0000	0.0000	0.0000	162.11	162.38
13 Kahe 3	86.1	1	673.7	78.81	48.885	480.1	0.	0.	0.0000	7.6900	0.0000	0.0000	0.0000	156.95	157.31
14 Kahe 4	85.3	1	605.3	68.98	42.389	433.0	1.	0.	0.0000	6.9367	0.0000	0.0000	0.0000	161.32	163.64
15 Kahe 5	134.3	1	686.9	83.28	80.568	788.8	0.	0.	0.0000	12.6349	0.0000	0.0000	0.0000	156.66	156.82
16 Kahe 6	134.4	1	697.4	67.04	64.908	664.7	0.	0.	0.0000	10.6473	0.0000	0.0000	0.0000	163.76	164.04
17 Kala CC	90.0	1	83.2	11.22	7.272	62.9	1.	0.	0.0000	1.0745	0.0000	0.0000	0.0000	147.77	147.77
18 Kala CC	90.0	1	531.1	73.15	47.424	407.3	2.	0.	0.0000	6.9619	0.0000	0.0000	0.0000	146.80	146.80
19 AES	180.0	1	712.6	98.91	128.261	2222.4	0.	0.	0.0000	3.6745	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	636.5	88.35	29.278	246.6	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	82.3	7.79	1.572	13.5	1.	0.	0.0000	0.2316	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	59.8	4.33	0.307	3.2	10.	0.	0.0000	0.0767	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	57.8	4.15	0.294	3.1	10.	0.	0.0000	0.0736	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	60.7	4.53	0.321	3.3	9.	0.	0.0000	0.0802	0.0000	0.0000	0.0000	249.93	249.93
System					633.239	7357.	195.	0.	0.0000	82.9873	0.0000	0.0000	0.0000	129.82	131.05

Year: 2009    Month: Apr

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.392	0.0254	0.0000	0.0254		64.66
2	ArcherPV	HOURLY	0.027	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Apr

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	99.859	181.069	Bbl	1122.6	17.9828	180.08	11242.	1601.85
2 KLSFO	300.587	487.185	Bbl	3020.5	48.3848	160.97	10049.	1601.85
3 HLSFO	16.672	33.963	Bbl	210.6	3.4786	208.65	12631.	1651.96
4 DG SUB	0.922	1.638	Bbl	9.6	0.2305	249.93	10409.	2401.05
5 WDIESEL	1.392	6.984	Bbl	40.9	0.9681	695.25	29394.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	128.261	2222.392	Bbl	2222.4	3.6745	28.65	17327.	165.34
8 KALAELOA	56.268	80.611	Bbl	483.7	8.2680	146.94	8596.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	29.278	39.771	Bbl	246.6	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	417.118	702.217	Bbl	4353.7	69.8462	167.45	10438.	1604.3
2 DIESEL	1.392	6.984	Bbl	40.9	0.9681	695.25	29394.	2365.3
4 AES	128.261	2222.392	Bbl	2222.4	3.6745	28.65	17327.	165.3
5 KALAELOA	56.268	80.611	Bbl	483.7	8.2680	146.94	8596.	1709.4
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	29.278	39.771	Bbl	246.6	0.0000	0.00	8422.	0.0
9 DG SUB	0.922	1.638	Bbl	9.6	0.2305	249.93	10409.	2401.1

Year: 2009 Month: Apr

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	633.76			Thermal Gen:	633.24	82.9873131.05		
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.42	0.0254	60.53	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.09	0.0089100.00		
				Lvl Cost:		0.0000		
Total:	633.76	0.0000	0.00	Total:	633.75	83.0215131.00		
				System Net:		83.0215131.00		
				LOLH(hr):	1.36			



Year: 2009 Month: Apr

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	69.1	300.5875	3020.6	2.	0.0000	48.3848	0.0000	160.97
2 Waiau	29.7	101.2509	1163.6	111.	0.0000	18.9509	0.0000	187.17
3 Kalaeloa	37.6	56.2680	483.7	4.	0.0000	8.2680	0.0000	146.94
4 AES	99.0	128.2608	2222.4	0.	0.0000	3.6745	0.0000	28.65
5 HPOWER	88.4	29.2779	246.6	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	21.5	16.6716	210.6	49.	0.0000	3.4786	0.0000	208.65
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	4.3	0.9224	9.6	29.	0.0000	0.2305	0.0000	249.93

Year: 2009 Month: Apr

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
25.947027	39.981106	17.059143	82.987274

Year: 2009 Month: May

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	458.6	27.19	10.809	134.5	25.	0.	0.0000	2.2220	0.0000	0.0000	0.0000	198.19	205.58
2 Honolulu 9	54.4	1	287.2	18.25	7.389	95.9	27.	0.	0.0000	1.5836	0.0000	0.0000	0.0000	202.93	214.31
3 Waiiau 3	46.6	1	123.5	11.57	4.013	53.7	15.	0.	0.0000	0.8609	0.0000	0.0000	0.0000	194.53	214.54
4 Waiiau 4	46.6	1	212.5	14.34	4.975	68.3	23.	0.	0.0000	1.0944	0.0000	0.0000	0.0000	195.45	219.97
5 Waiiau 5	54.5	1	446.3	26.61	10.795	138.6	29.	0.	0.0000	2.2204	0.0000	0.0000	0.0000	193.77	205.70
6 Waiiau 6	53.5	1	381.2	23.12	9.209	120.6	30.	0.	0.0000	1.9324	0.0000	0.0000	0.0000	195.51	209.84
7 Waiiau 7	82.9	1	696.2	52.19	32.209	349.7	0.	0.	0.0000	5.6013	0.0000	0.0000	0.0000	173.28	173.91
8 Waiiau 8	86.1	1	692.4	70.19	44.991	466.6	0.	0.	0.0000	7.4737	0.0000	0.0000	0.0000	165.72	166.12
9 Waiiau 9	52.9	1	26.2	0.72	0.283	7.7	5.	0.	0.0000	0.1823	0.0000	0.0000	0.0000	640.49	644.69
10 Waiiau 10	49.9	1	77.5	1.86	0.693	20.4	14.	0.	0.0000	0.4834	0.0000	0.0000	0.0000	692.94	698.02
11 Kahe 1	82.1	1	724.3	63.31	38.694	399.0	0.	0.	0.0000	6.3916	0.0000	0.0000	0.0000	164.91	165.18
12 Kahe 2	82.1	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
13 Kahe 3	86.1	1	700.6	80.69	51.719	507.6	0.	0.	0.0000	8.1313	0.0000	0.0000	0.0000	156.80	157.22
14 Kahe 4	85.3	1	699.4	78.33	49.741	501.6	0.	0.	0.0000	8.0345	0.0000	0.0000	0.0000	161.12	161.53
15 Kahe 5	134.3	1	716.2	85.29	85.272	834.0	0.	0.	0.0000	13.3601	0.0000	0.0000	0.0000	156.51	156.68
16 Kahe 6	134.4	1	721.0	67.92	67.954	694.7	0.	0.	0.0000	11.1275	0.0000	0.0000	0.0000	163.53	163.75
17 Kala CC	90.0	1	401.3	53.91	36.115	309.3	7.	0.	0.0000	5.2882	0.0000	0.0000	0.0000	146.42	146.42
18 Kala CC	90.0	1	711.5	95.50	63.982	548.2	2.	0.	0.0000	9.3709	0.0000	0.0000	0.0000	146.46	146.46
19 AES	180.0	1	731.8	98.30	131.717	2282.3	0.	0.	0.0000	3.7735	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	343.2	33.21	11.371	96.6	1.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	401.5	42.12	8.780	75.7	7.	0.	0.0000	1.2934	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	52.8	3.77	0.276	2.9	9.	0.	0.0000	0.0689	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	50.6	3.57	0.262	2.7	10.	0.	0.0000	0.0654	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	39.1	2.79	0.205	2.1	8.	0.	0.0000	0.0511	0.0000	0.0000	0.0000	249.93	249.93
System					671.452	7713.	212.	0.	0.0000	90.6109	0.0000	0.0000	0.0000	133.83	134.95

Year: 2009    Month: May

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost \$/MWh	Cost
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262	64.66	
2	ArcherPV	HOURLY	0.030	0.0000	0.0000	0.0000	0.00	

Year: 2009 Month: May

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	106.191	193.155	Bbl	1197.6	19.1831	180.65	11277.	1601.85
2 KLSFO	293.381	473.696	Bbl	2936.9	47.0451	160.36	10011.	1601.85
3 HLSFO	18.198	37.156	Bbl	230.4	3.8056	209.12	12659.	1651.96
4 DG SUB	0.742	1.318	Bbl	7.7	0.1854	249.93	10409.	2401.05
5 WDIESEL	0.975	4.803	Bbl	28.1	0.6657	682.56	28857.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.717	2282.276	Bbl	2282.3	3.7735	28.65	17327.	165.34
8 KALAELOA	108.877	155.532	Bbl	933.2	15.9524	146.52	8571.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	11.371	15.575	Bbl	96.6	0.0000	0.00	8492.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	417.769	704.007	Bbl	4364.8	70.0338	167.64	10448.	1604.5
2 DIESEL	0.975	4.803	Bbl	28.1	0.6657	682.56	28857.	2365.3
4 AES	131.717	2282.276	Bbl	2282.3	3.7735	28.65	17327.	165.3
5 KALAELOA	108.877	155.532	Bbl	933.2	15.9524	146.52	8571.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	11.371	15.575	Bbl	96.6	0.0000	0.00	8492.	0.0
9 DG SUB	0.742	1.318	Bbl	7.7	0.1854	249.93	10409.	2401.1

Year: 2009 Month: May

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	671.94			Therml Gen:	671.45	90.6109	134.95	
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.44	0.0262	60.17	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.03	0.0026	100.00	
Total:	671.94	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	671.91	90.6397	134.90	
				System Net:		90.6397	134.90	
				LOLH(hr):	0.77			

Year: 2009 Month: May

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	65.3	293.3806	2936.9	1.	0.0000	47.0451	0.0000	160.36
2 Waiau	30.5	107.1662	1225.7	115.	0.0000	19.8489	0.0000	185.22
3 Kalaeloa	70.4	108.8773	933.2	16.	0.0000	15.9524	0.0000	146.52
4 AES	98.4	131.7169	2282.3	0.	0.0000	3.7735	0.0000	28.65
5 HPOWER	33.2	11.3712	96.6	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	22.7	18.1979	230.4	52.	0.0000	3.8056	0.0000	209.12
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	3.4	0.7420	7.7	27.	0.0000	0.1854	0.0000	249.93

Year: 2009 Month: May

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
29.117208	43.457088	18.036341	90.610634

Year: 2009 Month: Jun

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Fuel Cst M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	407.6	24.36	9.371	117.7	26.	0.	0.0000	1.9443	0.0000	0.0000	198.73	207.48
2 Honolulu 9	54.4	1	209.0	13.12	5.142	67.7	22.	0.	0.0000	1.1181	0.0000	0.0000	204.30	217.45
3 Waiiau 3	46.6	1	91.7	8.64	2.899	39.0	11.	0.	0.0000	0.6247	0.0000	0.0000	195.02	215.49
4 Waiiau 4	46.6	1	50.2	3.39	1.139	15.9	6.	0.	0.0000	0.2545	0.0000	0.0000	195.82	223.39
5 Waiiau 5	54.5	1	377.4	22.55	8.853	115.5	29.	0.	0.0000	1.8501	0.0000	0.0000	194.40	208.99
6 Waiiau 6	53.5	1	300.6	18.28	7.044	93.6	26.	0.	0.0000	1.4988	0.0000	0.0000	196.15	212.77
7 Waiiau 7	82.9	1	678.0	50.60	30.216	329.1	0.	0.	0.0000	5.2716	0.0000	0.0000	173.72	174.47
8 Waiiau 8	86.1	1	680.9	66.74	41.393	431.2	0.	0.	0.0000	6.9074	0.0000	0.0000	166.31	166.87
9 Waiiau 9	52.9	1	27.4	0.57	0.217	7.3	5.	0.	0.0000	0.1729	0.0000	0.0000	791.52	797.28
10 Waiiau 10	49.9	1	51.5	1.05	0.377	12.9	8.	0.	0.0000	0.3041	0.0000	0.0000	801.33	807.20
11 Kahe 1	82.1	1	697.2	59.14	34.975	362.2	0.	0.	0.0000	5.8017	0.0000	0.0000	165.56	165.88
12 Kahe 2	82.1	1	159.6	14.17	8.378	90.3	1.	0.	0.0000	1.4465	0.0000	0.0000	163.00	172.65
13 Kahe 3	86.1	1	670.8	77.25	47.914	471.3	0.	0.	0.0000	7.5494	0.0000	0.0000	157.09	157.56
14 Kahe 4	85.3	1	675.1	74.54	45.806	463.8	0.	0.	0.0000	7.4297	0.0000	0.0000	161.67	162.20
15 Kahe 5	134.3	1	687.1	82.69	79.998	783.7	0.	0.	0.0000	12.5533	0.0000	0.0000	156.74	156.92
16 Kahe 6	134.4	1	701.0	62.98	60.978	626.7	0.	0.	0.0000	10.0386	0.0000	0.0000	164.21	164.63
17 Kala CC	90.0	1	613.4	84.97	55.088	472.2	8.	0.	0.0000	8.0717	0.0000	0.0000	146.52	146.52
18 Kala CC	90.0	1	709.9	97.91	63.479	544.8	0.	0.	0.0000	9.3137	0.0000	0.0000	146.72	146.72
19 AES	180.0	1	707.3	98.18	127.310	2205.9	0.	0.	0.0000	3.6473	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	640.3	85.89	28.461	239.9	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	612.5	65.85	13.282	114.5	8.	0.	0.0000	1.9567	0.0000	0.0000	147.32	147.32
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	32.5	2.33	0.165	1.7	7.	0.	0.0000	0.0413	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	30.1	2.14	0.152	1.6	7.	0.	0.0000	0.0379	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	24.0	1.74	0.123	1.3	6.	0.	0.0000	0.0308	0.0000	0.0000	249.93	249.93
System					672.761	7610.	173.	0.	0.0000	87.8653	0.0000	0.0000	129.54	130.60

Year: 2009    Month: Jun

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.392	0.0254	0.0000	0.0254		64.66
2	ArcherPV	HOURLY	0.030	0.0000	0.0000	0.0000		0.00



Year: 2009 Month: Jun

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	91.544	165.203	Bbl	1024.3	16.4071	179.23	11189.	1601.85
2 KLSFO	278.049	451.284	Bbl	2798.0	44.8192	161.19	10063.	1601.85
3 HLSFO	14.513	29.900	Bbl	185.4	3.0624	211.01	12773.	1651.96
4 DG SUB	0.441	0.783	Bbl	4.6	0.1101	249.93	10409.	2401.06
5 WDIESEL	0.594	3.442	Bbl	20.2	0.4770	803.57	33973.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	127.310	2205.925	Bbl	2205.9	3.6473	28.65	17327.	165.34
8 KALAELOA	131.849	188.580	Bbl	1131.5	19.3421	146.70	8582.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	28.461	38.690	Bbl	239.9	0.0000	0.00	8428.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	384.107	646.387	Bbl	4007.6	64.2887	167.37	10434.	1604.2
2 DIESEL	0.594	3.442	Bbl	20.2	0.4770	803.57	33973.	2365.3
4 AES	127.310	2205.925	Bbl	2205.9	3.6473	28.65	17327.	165.3
5 KALAELOA	131.849	188.580	Bbl	1131.5	19.3421	146.70	8582.	1709.4
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	28.461	38.690	Bbl	239.9	0.0000	0.00	8428.	0.0
9 DG SUB	0.441	0.783	Bbl	4.6	0.1101	249.93	10409.	2401.1

Year: 2009 Month: Jun

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	673.18			Therml Gen:	672.76	87.8653	130.60	
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.42	0.0254	60.08	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00	
Total:	673.18	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	673.18	87.8907	130.56	
				System Net:		87.8907	130.56	
				LOLH(hr):	0.00			

Year: 2009 Month: Jun

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	63.9	278.0491	2798.0	2.	0.0000	44.8192	0.0000	161.19
2 Waiau	27.1	92.1379	1044.4	86.	0.0000	16.8842	0.0000	183.25
3 Kalaeloa	88.0	131.8491	1131.5	16.	0.0000	19.3421	0.0000	146.70
4 AES	98.2	127.3104	2205.9	0.	0.0000	3.6473	0.0000	28.65
5 HPOWER	85.9	28.4609	239.9	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	18.7	14.5132	185.4	48.	0.0000	3.0624	0.0000	211.01
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	2.1	0.4405	4.6	20.	0.0000	0.1101	0.0000	249.93

Year: 2009 Month: Jun

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
28.724976	41.979832	17.160442	87.865250

Year: 2009 Month: Jul

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M M\$	FO&M M\$	Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	408.8	24.91	9.903	123.4	26.	0.	0.0000	2.0381	0.0000	0.0000	0.0000	0.0000	197.62	205.81
2 Honolulu 9	54.4	1	65.3	3.97	1.609	21.3	7.	0.	0.0000	0.3512	0.0000	0.0000	0.0000	0.0000	204.30	218.20
3 Waiiau 3	46.6	1	144.4	13.39	4.646	61.8	16.	0.	0.0000	0.9907	0.0000	0.0000	0.0000	0.0000	194.65	213.23
4 Waiiau 4	46.6	1	216.7	14.65	5.083	69.1	21.	0.	0.0000	1.1065	0.0000	0.0000	0.0000	0.0000	195.36	217.69
5 Waiiau 5	54.5	1	375.2	22.95	9.310	120.2	29.	0.	0.0000	1.9255	0.0000	0.0000	0.0000	0.0000	193.20	206.82
6 Waiiau 6	53.5	1	315.4	19.68	7.839	102.9	27.	0.	0.0000	1.6475	0.0000	0.0000	0.0000	0.0000	194.85	210.16
7 Waiiau 7	82.9	1	696.2	50.46	31.142	339.6	0.	0.	0.0000	5.4394	0.0000	0.0000	0.0000	0.0000	173.94	174.67
8 Waiiau 8	86.1	1	697.0	65.16	41.766	435.5	0.	0.	0.0000	6.9755	0.0000	0.0000	0.0000	0.0000	166.51	167.01
9 Waiiau 9	52.9	1	63.4	1.57	0.619	18.1	12.	0.	0.0000	0.4272	0.0000	0.0000	0.0000	0.0000	685.04	690.08
10 Waiiau 10	49.9	1	106.7	2.43	0.903	27.7	17.	0.	0.0000	0.6547	0.0000	0.0000	0.0000	0.0000	720.10	725.06
11 Kahe 1	82.1	1	94.1	7.01	4.283	44.6	0.	0.	0.0000	0.7143	0.0000	0.0000	0.0000	0.0000	166.76	166.76
12 Kahe 2	82.1	1	726.5	66.32	40.529	411.5	0.	0.	0.0000	6.5915	0.0000	0.0000	0.0000	0.0000	162.46	162.46
13 Kahe 3	86.1	1	696.7	76.80	49.225	484.0	0.	0.	0.0000	7.7537	0.0000	0.0000	0.0000	0.0000	157.12	157.12
14 Kahe 4	85.3	1	697.4	73.77	46.844	474.3	0.	0.	0.0000	7.5969	0.0000	0.0000	0.0000	0.0000	161.74	162.17
15 Kahe 5	134.3	1	717.1	83.45	83.427	816.8	0.	0.	0.0000	13.0838	0.0000	0.0000	0.0000	0.0000	156.72	156.83
16 Kahe 6	134.4	1	723.6	63.02	63.052	647.5	0.	0.	0.0000	10.3717	0.0000	0.0000	0.0000	0.0000	164.24	164.49
17 Kala CC	90.0	1	634.7	85.25	57.117	489.3	8.	0.	0.0000	8.3635	0.0000	0.0000	0.0000	0.0000	146.43	146.43
18 Kala CC	90.0	1	733.7	98.41	65.934	565.0	0.	0.	0.0000	9.6587	0.0000	0.0000	0.0000	0.0000	146.49	146.49
19 AES	180.0	1	733.2	98.49	131.976	2286.8	0.	0.	0.0000	3.7810	0.0000	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	656.4	88.18	30.194	254.3	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	635.9	64.11	13.363	115.2	8.	0.	0.0000	1.9686	0.0000	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
23 DG Sub1	9.8	1	66.7	4.79	0.351	3.6	12.	0.	0.0000	0.0876	0.0000	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	50.8	3.59	0.263	2.7	10.	0.	0.0000	0.0657	0.0000	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	54.7	3.95	0.289	3.0	11.	0.	0.0000	0.0722	0.0000	0.0000	0.0000	0.0000	249.93	249.93
System					699.668	7918.	207.	0.	0.0000	91.6656	0.0000	0.0000	0.0000	0.0000	130.05	131.01

Year: 2009    Month: Jul

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262		64.66
2	ArcherPV	HOURLY	0.031	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Jul

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	99.787	182.099	Bbl	1129.0	18.0851	181.24	11314.	1601.85
2 KLSFO	287.360	464.300	Bbl	2878.7	46.1119	160.47	10018.	1601.85
3 HLSFO	11.512	23.328	Bbl	144.6	2.3893	207.54	12563.	1651.96
4 DG SUB	0.902	1.603	Bbl	9.4	0.2255	249.93	10409.	2401.05
5 WDIESEL	1.522	7.805	Bbl	45.7	1.0819	710.84	30052.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.976	2286.767	Bbl	2286.8	3.7810	28.65	17327.	165.34
8 KALAELOA	136.414	194.906	Bbl	1169.4	19.9909	146.55	8573.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.194	41.016	Bbl	254.3	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	398.659	669.727	Bbl	4152.3	66.5863	167.03	10416.	1603.6
2 DIESEL	1.522	7.805	Bbl	45.7	1.0819	710.84	30052.	2365.3
4 AES	131.976	2286.767	Bbl	2286.8	3.7810	28.65	17327.	165.3
5 KALAELOA	136.414	194.906	Bbl	1169.4	19.9909	146.55	8573.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.194	41.016	Bbl	254.3	0.0000	0.00	8422.	0.0
9 DG SUB	0.902	1.603	Bbl	9.4	0.2255	249.93	10409.	2401.1

Year: 2009 Month: Jul

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	700.22			Thermal Gen:	699.67	91.6656	131.01	
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.44	0.0262	60.09	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.10	0.0096	100.00	
Total:	700.22	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	700.20	91.7014	130.96	
				System Net:		91.7014	130.96	
				LOLH(hr):	1.53			

Year: 2009 Month: Jul

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	63.9	287.3602	2878.7	1.	0.0000	46.1119	0.0000	160.47
2 Waiau	28.8	101.3088	1174.8	122.	0.0000	19.1670	0.0000	189.19
3 Kalaeloa	88.2	136.4140	1169.4	16.	0.0000	19.9909	0.0000	146.55
4 AES	98.5	131.9761	2286.8	0.	0.0000	3.7810	0.0000	28.65
5 HPOWER	88.2	30.1942	254.3	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	14.4	11.5123	144.6	33.	0.0000	2.3893	0.0000	207.54
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	4.1	0.9024	9.4	34.	0.0000	0.2255	0.0000	249.93

Year: 2009 Month: Jul

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
29.380108	44.137268	18.148235	91.665611



Year: 2009 Month: Aug

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M M\$	FO&M M\$	Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	466.4	28.40	11.291	140.0	26.	0.	0.0000	2.3127	0.0000	0.0000	0.0000	0.0000	197.62	204.83
2 Honolulu 9	54.4	1	292.0	19.45	7.878	101.3	27.	0.	0.0000	1.6731	0.0000	0.0000	0.0000	0.0000	201.44	212.37
3 Waiiau 3	46.6	1	20.5	1.86	0.647	9.0	3.	0.	0.0000	0.1449	0.0000	0.0000	0.0000	0.0000	195.02	223.98
4 Waiiau 4	46.6	1	215.7	14.54	5.044	70.1	25.	0.	0.0000	1.1225	0.0000	0.0000	0.0000	0.0000	195.35	222.54
5 Waiiau 5	54.5	1	438.7	26.86	10.896	139.3	29.	0.	0.0000	2.2311	0.0000	0.0000	0.0000	0.0000	193.09	204.76
6 Waiiau 6	53.5	1	390.7	23.94	9.533	124.4	30.	0.	0.0000	1.9933	0.0000	0.0000	0.0000	0.0000	195.11	209.09
7 Waiiau 7	82.9	1	694.3	52.42	32.347	351.3	0.	0.	0.0000	5.6271	0.0000	0.0000	0.0000	0.0000	173.24	173.96
8 Waiiau 8	86.1	1	690.0	69.36	44.459	461.6	0.	0.	0.0000	7.3935	0.0000	0.0000	0.0000	0.0000	165.72	166.30
9 Waiiau 9	52.9	1	19.8	0.50	0.197	5.7	4.	0.	0.0000	0.1339	0.0000	0.0000	0.0000	0.0000	673.59	679.23
10 Waiiau 10	49.9	1	42.2	1.06	0.394	11.2	8.	0.	0.0000	0.2660	0.0000	0.0000	0.0000	0.0000	669.80	674.97
11 Kahe 1	82.1	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
12 Kahe 2	82.1	1	724.1	70.90	43.335	438.3	0.	0.	0.0000	7.0209	0.0000	0.0000	0.0000	0.0000	161.76	162.02
13 Kahe 3	86.1	1	694.8	81.50	52.239	512.5	0.	0.	0.0000	8.2101	0.0000	0.0000	0.0000	0.0000	156.64	157.16
14 Kahe 4	85.3	1	692.9	77.83	49.424	498.3	0.	0.	0.0000	7.9823	0.0000	0.0000	0.0000	0.0000	161.03	161.51
15 Kahe 5	134.3	1	712.1	86.84	86.816	848.2	0.	0.	0.0000	13.5871	0.0000	0.0000	0.0000	0.0000	156.32	156.50
16 Kahe 6	134.4	1	715.9	66.64	66.668	682.4	0.	0.	0.0000	10.9305	0.0000	0.0000	0.0000	0.0000	163.55	163.95
17 Kala CC	90.0	1	620.3	83.32	55.824	478.2	10.	0.	0.0000	8.1741	0.0000	0.0000	0.0000	0.0000	146.43	146.43
18 Kala CC	90.0	1	735.6	98.81	66.203	567.1	0.	0.	0.0000	9.6938	0.0000	0.0000	0.0000	0.0000	146.43	146.43
19 AES	180.0	1	735.4	98.78	132.365	2293.5	0.	0.	0.0000	3.7921	0.0000	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	660.2	88.69	30.371	255.8	1.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	619.8	67.86	14.145	121.9	10.	0.	0.0000	2.0839	0.0000	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	182.4	8.66	7.286	125.4	23.	0.	0.0000	2.9660	0.0000	0.0000	0.0000	0.0000	397.65	407.11
23 DG Sub1	9.8	1	27.3	1.85	0.136	1.4	5.	0.	0.0000	0.0339	0.0000	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	25.7	1.82	0.134	1.4	5.	0.	0.0000	0.0334	0.0000	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	22.8	1.56	0.114	1.2	5.	0.	0.0000	0.0286	0.0000	0.0000	0.0000	0.0000	249.93	249.93
System					727.746	8239.	213.	0.	0.0000	97.4347	0.0000	0.0000	0.0000	0.0000	132.77	133.89

Year: 2009    Month: Aug

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost \$/MWh	Cost
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262	64.66	
2	ArcherPV	HOURLY	0.030	0.0000	0.0000	0.0000	0.00	

Year: 2009 Month: Aug

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	102.926	186.400	Bbl	1155.7	18.5123	179.86	11228.	1601.85
2 KLSFO	298.482	480.601	Bbl	2979.7	47.7309	159.91	9983.	1601.85
3 HLSFO	19.169	38.916	Bbl	241.3	3.9858	207.93	12587.	1651.96
4 DG SUB	0.384	0.682	Bbl	4.0	0.0959	249.93	10409.	2401.05
5 WDIESEL	0.591	2.885	Bbl	16.9	0.3999	676.39	28596.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	132.365	2293.504	Bbl	2293.5	3.7921	28.65	17327.	165.34
8 KALAELOA	136.173	194.524	Bbl	1167.1	19.9518	146.52	8571.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.371	41.256	Bbl	255.8	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	7.286	21.399	Bbl	125.4	2.9660	407.11	17212.	2365.31

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	420.577	705.917	Bbl	4376.7	70.2290	166.98	10406.	1604.6
2 DIESEL	7.877	24.284	Bbl	142.3	3.3659	427.32	18066.	2365.3
4 AES	132.365	2293.504	Bbl	2293.5	3.7921	28.65	17327.	165.3
5 KALAELOA	136.173	194.524	Bbl	1167.1	19.9518	146.52	8571.	1709.4
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.371	41.256	Bbl	255.8	0.0000	0.00	8422.	0.0
9 DG SUB	0.384	0.682	Bbl	4.0	0.0959	249.93	10409.	2401.1

Year: 2009 Month: Aug

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	728.20			Thermal Gen:	727.75	97.4347133.89		
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.44	0.0262	60.23	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.01	0.0013100.00		
Total:	728.20	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	728.19	97.4622133.84		
				System Net:		97.4622133.84		
				LOLH(hr):	0.41			

Year: 2009 Month: Aug

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	66.4	298.4819	2979.7	1.	0.0000	47.7309	0.0000	159.91
2 Waiau	29.4	103.5174	1172.6	100.	0.0000	18.9122	0.0000	182.70
3 Kalaeloa	88.0	136.1725	1167.1	20.	0.0000	19.9518	0.0000	146.52
4 AES	98.8	132.3649	2293.5	0.	0.0000	3.7921	0.0000	28.65
5 HPOWER	88.7	30.3708	255.8	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	23.9	19.1692	241.3	53.	0.0000	3.9858	0.0000	207.93
8 CIP	8.7	7.2855	125.4	23.	0.0000	2.9660	0.0000	407.11
9 DG Sub	1.7	0.3839	4.0	14.	0.0000	0.0959	0.0000	249.93

Year: 2009 Month: Aug

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
31.238129	46.633102	19.563128	97.434357

Year: 2009 Month: Sep

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	430.2	26.20	10.079	125.8	25.	0.	0.0000	2.0782	0.0000	0.0000	0.0000	198.31	206.20
2 Honolulu 9	54.4	1	299.4	18.74	7.344	95.9	27.	0.	0.0000	1.5846	0.0000	0.0000	0.0000	204.38	215.76
3 Waiiau 3	46.6	1	136.7	12.97	4.355	59.0	18.	0.	0.0000	0.9446	0.0000	0.0000	0.0000	194.85	216.87
4 Waiiau 4	46.6	1	224.9	15.29	5.132	71.5	26.	0.	0.0000	1.1457	0.0000	0.0000	0.0000	195.77	223.27
5 Waiiau 5	54.5	1	234.0	14.09	5.530	71.2	15.	0.	0.0000	1.1403	0.0000	0.0000	0.0000	194.18	206.18
6 Waiiau 6	53.5	1	388.2	23.98	9.242	121.0	29.	0.	0.0000	1.9385	0.0000	0.0000	0.0000	195.77	209.75
7 Waiiau 7	82.9	1	675.4	52.20	31.177	338.3	0.	0.	0.0000	5.4197	0.0000	0.0000	0.0000	173.19	173.84
8 Waiiau 8	86.1	1	678.2	70.72	43.866	454.8	0.	0.	0.0000	7.2846	0.0000	0.0000	0.0000	165.68	166.07
9 Waiiau 9	52.9	1	16.5	0.35	0.134	4.4	4.	0.	0.0000	0.1101	0.0000	0.0000	0.0000	773.81	781.64
10 Waiiau 10	49.9	1	17.4	0.46	0.165	4.7	4.	0.	0.0000	0.1101	0.0000	0.0000	0.0000	661.57	667.12
11 Kahe 1	82.1	1	560.4	50.14	29.657	310.6	1.	0.	0.0000	4.9754	0.0000	0.0000	0.0000	164.90	167.76
12 Kahe 2	82.1	1	692.9	72.02	42.595	430.3	0.	0.	0.0000	6.8932	0.0000	0.0000	0.0000	161.53	161.83
13 Kahe 3	86.1	1	363.4	43.11	26.740	262.5	0.	0.	0.0000	4.2045	0.0000	0.0000	0.0000	156.84	157.24
14 Kahe 4	85.3	1	676.1	79.04	48.573	489.4	0.	0.	0.0000	7.8401	0.0000	0.0000	0.0000	161.01	161.41
15 Kahe 5	134.3	1	690.5	86.65	83.834	819.1	0.	0.	0.0000	13.1201	0.0000	0.0000	0.0000	156.37	156.50
16 Kahe 6	134.4	1	701.0	68.03	65.866	673.1	0.	0.	0.0000	10.7825	0.0000	0.0000	0.0000	163.46	163.70
17 Kala CC	90.0	1	611.3	84.85	55.015	471.2	8.	0.	0.0000	8.0556	0.0000	0.0000	0.0000	146.43	146.43
18 Kala CC	90.0	1	702.7	97.51	63.220	541.6	0.	0.	0.0000	9.2581	0.0000	0.0000	0.0000	146.44	146.44
19 AES	180.0	1	705.4	97.91	126.965	2199.9	0.	0.	0.0000	3.6374	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	631.9	87.72	29.068	244.8	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	613.7	68.57	13.832	119.2	8.	0.	0.0000	2.0377	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	138.0	6.76	5.504	95.2	21.	0.	0.0000	2.2520	0.0000	0.0000	0.0000	397.93	409.16
23 DG Sub1	9.8	1	17.0	1.19	0.085	0.9	4.	0.	0.0000	0.0211	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	13.3	0.95	0.067	0.7	3.	0.	0.0000	0.0168	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	13.4	0.99	0.070	0.7	3.	0.	0.0000	0.0175	0.0000	0.0000	0.0000	249.93	249.93
System					708.115	8006.	197.	0.	0.0000	94.8630	0.0000	0.0000	0.0000	132.76	133.97

Year: 2009    Month: Sep

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.392	0.0254	0.0000	0.0254		64.66
2	ArcherPV	HOURLY	0.027	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Sep

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	99.302	179.966	Bbl	1115.8	17.8733	179.99	11236.	1601.85
2 KLSFO	297.265	481.456	Bbl	2985.0	47.8158	160.85	10042.	1601.85
3 HLSFO	17.423	35.763	Bbl	221.7	3.6629	210.23	12726.	1651.96
4 DG SUB	0.222	0.394	Bbl	2.3	0.0555	249.93	10409.	2401.05
5 WDIESEL	0.299	1.550	Bbl	9.1	0.2148	718.44	30374.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	126.965	2199.937	Bbl	2199.9	3.6374	28.65	17327.	165.34
8 KALAELOA	132.067	188.670	Bbl	1132.0	19.3513	146.53	8572.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	29.068	39.486	Bbl	244.8	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	5.504	16.248	Bbl	95.2	2.2520	409.16	17298.	2365.31

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	413.991	697.185	Bbl	4322.5	69.3520	167.52	10441.	1604.4
2 DIESEL	5.803	17.797	Bbl	104.3	2.4668	425.09	17972.	2365.3
4 AES	126.965	2199.937	Bbl	2199.9	3.6374	28.65	17327.	165.3
5 KALAELOA	132.067	188.670	Bbl	1132.0	19.3513	146.53	8572.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	29.068	39.486	Bbl	244.8	0.0000	0.00	8422.	0.0
9 DG SUB	0.222	0.394	Bbl	2.3	0.0555	249.93	10409.	2401.1



Year: 2009 Month: Sep

System Energy and Cost Summary

	Demand			Supply			
	GWh	Cost M\$	\$/MWh		GWh	Cost M\$	\$/MWh
Load:	708.53			Therml Gen:	708.12	94.8630133.97	
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.42	0.0254	60.44
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000	
Transm Loss:	0.00			Dsm Reductn:	0.00		
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00
Total:	708.53	0.0000	0.00	Lvl Cost:		0.0000	
				Total:	708.53	94.8884133.92	
				System Net:		94.8884133.92	
				LOLH(hr):	0.00		

Year: 2009 Month: Sep

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	68.3	297.2654	2985.0	2.	0.0000	47.8158	0.0000	160.85
2 Waiau	29.2	99.6010	1124.9	96.	0.0000	18.0881	0.0000	181.61
3 Kalaeloa	88.2	132.0669	1132.0	16.	0.0000	19.3513	0.0000	146.53
4 AES	98.0	126.9648	2199.9	0.	0.0000	3.6374	0.0000	28.65
5 HPOWER	87.8	29.0681	244.8	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	22.4	17.4232	221.7	52.	0.0000	3.6629	0.0000	210.23
8 CIP	6.8	5.5041	95.2	21.	0.0000	2.2520	0.0000	409.16
9 DG Sub	1.0	0.2219	2.3	10.	0.0000	0.0555	0.0000	249.93

Year: 2009 Month: Sep

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
30.376360	45.384304	19.102045	94.862709

Year: 2009 Month: Oct

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Fuel M\$	VO&M M\$	FO&M M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	349.1	20.47	8.137	101.8	22.	0.	0.0000	1.6825	0.0000	0.0000	198.43	206.78
2 Honolulu 9	54.4	1	284.8	17.47	7.075	92.6	27.	0.	0.0000	1.5292	0.0000	0.0000	204.04	216.15
3 Waiiau 3	46.6	1	123.8	11.35	3.937	53.9	18.	0.	0.0000	0.8640	0.0000	0.0000	194.93	219.45
4 Waiiau 4	46.6	1	213.0	14.12	4.900	68.6	26.	0.	0.0000	1.0992	0.0000	0.0000	195.67	224.35
5 Waiiau 5	54.5	1	430.8	25.41	10.309	132.8	29.	0.	0.0000	2.1276	0.0000	0.0000	193.97	206.38
6 Waiiau 6	53.5	1	370.8	22.20	8.843	116.3	30.	0.	0.0000	1.8636	0.0000	0.0000	195.78	210.75
7 Waiiau 7	82.9	1	691.9	51.20	31.594	343.2	0.	0.	0.0000	5.4978	0.0000	0.0000	173.40	174.01
8 Waiiau 8	86.1	1	360.2	34.65	22.211	231.0	0.	0.	0.0000	3.6998	0.0000	0.0000	166.17	166.57
9 Waiiau 9	52.9	1	15.3	0.38	0.149	4.3	3.	0.	0.0000	0.1024	0.0000	0.0000	680.50	686.29
10 Waiiau 10	49.9	1	17.6	0.52	0.194	4.9	3.	0.	0.0000	0.1166	0.0000	0.0000	595.85	600.40
11 Kahe 1	82.1	1	719.8	61.80	37.773	389.9	0.	0.	0.0000	6.2454	0.0000	0.0000	165.04	165.34
12 Kahe 2	82.1	1	725.8	71.60	43.757	442.3	0.	0.	0.0000	7.0844	0.0000	0.0000	161.72	161.90
13 Kahe 3	86.1	1	540.7	61.59	39.476	392.1	1.	0.	0.0000	6.2816	0.0000	0.0000	156.91	159.13
14 Kahe 4	85.3	1	697.0	77.28	49.074	495.2	0.	0.	0.0000	7.9327	0.0000	0.0000	161.25	161.65
15 Kahe 5	134.3	1	715.4	86.03	86.005	840.7	0.	0.	0.0000	13.4661	0.0000	0.0000	156.45	156.57
16 Kahe 6	134.4	1	718.8	67.03	67.065	686.0	0.	0.	0.0000	10.9886	0.0000	0.0000	163.58	163.85
17 Kala CC	90.0	1	575.0	77.24	51.746	443.2	7.	0.	0.0000	7.5770	0.0000	0.0000	146.43	146.47
18 Kala CC	90.0	1	715.4	95.99	64.314	551.1	2.	0.	0.0000	9.4202	0.0000	0.0000	146.47	146.47
19 AES	180.0	1	732.5	98.40	131.847	2284.5	0.	0.	0.0000	3.7772	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	662.2	88.95	30.459	256.5	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	571.6	59.18	12.336	106.3	7.	0.	0.0000	1.8174	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	117.3	5.67	4.766	82.0	20.	0.	0.0000	1.9404	0.0000	0.0000	394.44	407.12
23 DG Sub1	9.8	1	15.8	1.10	0.080	0.8	3.	0.	0.0000	0.0201	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	13.2	0.93	0.068	0.7	3.	0.	0.0000	0.0170	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	13.0	0.89	0.065	0.7	3.	0.	0.0000	0.0163	0.0000	0.0000	249.93	249.93
System					716.180	8122.	206.	0.	0.0000	95.1672	0.0000	0.0000	131.63	132.88

Year: 2009    Month: Oct

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262		64.66
2	ArcherPV	HOURLY	0.024	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Oct

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	81.794	152.566	Bbl	945.9	15.1520	185.25	11564.	1601.85
2 KLSFO	323.149	523.576	Bbl	3246.2	51.9989	160.91	10045.	1601.85
3 HLSFO	15.211	31.358	Bbl	194.4	3.2117	211.14	12781.	1651.96
4 DG SUB	0.213	0.379	Bbl	2.2	0.0533	249.93	10409.	2401.05
5 WDIESEL	0.343	1.580	Bbl	9.3	0.2190	637.73	26962.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.847	2284.521	Bbl	2284.5	3.7772	28.65	17327.	165.34
8 KALAELOA	128.396	183.436	Bbl	1100.6	18.8145	146.53	8572.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.459	41.376	Bbl	256.5	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	4.766	14.000	Bbl	82.0	1.9404	407.12	17212.	2365.31

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	420.155	707.499	Bbl	4386.5	70.3627	167.47	10440.	1604.1
2 DIESEL	5.110	15.579	Bbl	91.3	2.1594	422.61	17867.	2365.3
4 AES	131.847	2284.521	Bbl	2284.5	3.7772	28.65	17327.	165.3
5 KALAELOA	128.396	183.436	Bbl	1100.6	18.8145	146.53	8572.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.459	41.376	Bbl	256.5	0.0000	0.00	8422.	0.0
9 DG SUB	0.213	0.379	Bbl	2.2	0.0533	249.93	10409.	2401.1

Year: 2009 Month: Oct

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	716.63			Thermal Gen:	716.18	95.1672	132.88	
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.43	0.0262	61.04	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0002	100.00	
Total:	716.63	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	716.61	95.1936	132.84	
				System Net:		95.1936	132.84	
				LOLH(hr):	0.13			

Year: 2009 Month: Oct

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	71.9	323.1492	3246.2	2.	0.0000	51.9989	0.0000	160.91
2 Waiau	23.3	82.1378	955.2	110.	0.0000	15.3710	0.0000	187.14
3 Kalaeloa	83.0	128.3964	1100.6	16.	0.0000	18.8145	0.0000	146.53
4 AES	98.5	131.8465	2284.5	0.	0.0000	3.7772	0.0000	28.65
5 HPOWER	89.0	30.4592	256.5	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	19.0	15.2114	194.4	49.	0.0000	3.2117	0.0000	211.14
8 CIP	5.7	4.7663	82.0	20.	0.0000	1.9404	0.0000	407.12
9 DG Sub	1.0	0.2133	2.2	9.	0.0000	0.0533	0.0000	249.93

Year: 2009 Month: Oct

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
30.062828	45.562347	19.541931	95.167107

Year: 2009 Month: Nov

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
2 Honolulu 9	54.4	1	305.3	18.88	7.398	96.9	27.	0.	0.0000	1.6003	0.0000	0.0000	0.0000	204.81	216.31
3 Waiiau 3	46.6	1	139.7	13.01	4.369	59.8	19.	0.	0.0000	0.9581	0.0000	0.0000	0.0000	195.26	219.28
4 Waiiau 4	46.6	1	226.4	15.54	5.216	72.5	26.	0.	0.0000	1.1608	0.0000	0.0000	0.0000	195.63	222.55
5 Waiiau 5	54.5	1	478.2	28.81	11.310	144.9	28.	0.	0.0000	2.3213	0.0000	0.0000	0.0000	194.27	205.25
6 Waiiau 6	53.5	1	410.6	25.10	9.673	126.4	29.	0.	0.0000	2.0246	0.0000	0.0000	0.0000	196.08	209.31
7 Waiiau 7	82.9	1	679.2	52.19	31.166	338.5	0.	0.	0.0000	5.4215	0.0000	0.0000	0.0000	173.20	173.96
8 Waiiau 8	86.1	1	494.9	50.47	31.307	329.7	1.	0.	0.0000	5.2820	0.0000	0.0000	0.0000	165.85	168.72
9 Waiiau 9	52.9	1	11.2	0.27	0.105	3.1	3.	0.	0.0000	0.0740	0.0000	0.0000	0.0000	700.90	707.86
10 Waiiau 10	49.9	1	23.4	0.62	0.222	6.3	5.	0.	0.0000	0.1482	0.0000	0.0000	0.0000	661.11	667.40
11 Kahe 1	82.1	1	698.6	61.51	36.378	375.5	0.	0.	0.0000	6.0150	0.0000	0.0000	0.0000	165.04	165.35
12 Kahe 2	82.1	1	695.3	71.51	42.293	427.5	0.	0.	0.0000	6.8476	0.0000	0.0000	0.0000	161.60	161.91
13 Kahe 3	86.1	1	678.5	81.25	50.397	494.8	0.	0.	0.0000	7.9261	0.0000	0.0000	0.0000	156.79	157.27
14 Kahe 4	85.3	1	674.9	78.17	48.035	484.8	0.	0.	0.0000	7.7660	0.0000	0.0000	0.0000	161.15	161.67
15 Kahe 5	134.3	1	298.8	36.09	34.919	342.0	0.	0.	0.0000	5.4779	0.0000	0.0000	0.0000	156.73	156.87
16 Kahe 6	134.4	1	695.5	65.92	63.829	653.6	0.	0.	0.0000	10.4705	0.0000	0.0000	0.0000	163.62	164.04
17 Kala CC	90.0	1	606.6	83.96	54.436	466.7	9.	0.	0.0000	7.9781	0.0000	0.0000	0.0000	146.56	146.72
18 Kala CC	90.0	1	711.1	98.07	63.585	545.7	0.	0.	0.0000	9.3293	0.0000	0.0000	0.0000	146.72	146.72
19 AES	180.0	1	711.1	98.71	128.002	2217.9	0.	0.	0.0000	3.6671	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	637.4	85.54	28.345	238.9	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	608.2	67.87	13.689	118.0	9.	0.	0.0000	2.0166	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	141.7	6.87	5.591	97.4	22.	0.	0.0000	2.3034	0.0000	0.0000	0.0000	400.02	411.96
23 DG Sub1	9.8	1	19.4	1.43	0.102	1.1	4.	0.	0.0000	0.0254	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	18.7	1.39	0.099	1.0	4.	0.	0.0000	0.0246	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	14.2	1.06	0.075	0.8	4.	0.	0.0000	0.0188	0.0000	0.0000	0.0000	249.93	249.93
System					670.540	7644.	193.	0.	0.0000	88.8572	0.0000	0.0000	0.0000	131.22	132.52



Year: 2009    Month: Nov

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost \$/MWh
1	Non-Firm	CONSTANT	0.392	0.0254	0.0000	0.0254	64.66
2	ArcherPV	HOURLY	0.020	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Nov

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	93.040	172.867	Bbl	1071.8	17.1682	184.53	11519.	1601.85
2 KLSFO	275.851	448.100	Bbl	2778.2	44.5031	161.33	10071.	1601.85
3 HLSFO	7.398	15.625	Bbl	96.9	1.6003	216.31	13094.	1651.96
4 DG SUB	0.275	0.489	Bbl	2.9	0.0688	249.93	10409.	2401.05
5 WDIESEL	0.327	1.603	Bbl	9.4	0.2222	680.35	28764.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	128.002	2217.901	Bbl	2217.9	3.6671	28.65	17327.	165.34
8 KALAELOA	131.711	188.404	Bbl	1130.4	19.3240	146.72	8583.	1709.45
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	28.345	38.532	Bbl	238.9	0.0000	0.00	8428.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	5.591	16.618	Bbl	97.4	2.3034	411.96	17417.	2365.31

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	376.290	636.592	Bbl	3946.9	63.2716	168.15	10489.	1603.1
2 DIESEL	5.918	18.221	Bbl	106.8	2.5256	426.77	18043.	2365.3
4 AES	128.002	2217.901	Bbl	2217.9	3.6671	28.65	17327.	165.3
5 KALAELOA	131.711	188.404	Bbl	1130.4	19.3240	146.72	8583.	1709.5
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	28.345	38.532	Bbl	238.9	0.0000	0.00	8428.	0.0
9 DG SUB	0.275	0.489	Bbl	2.9	0.0688	249.93	10409.	2401.1

Year: 2009 Month: Nov

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	670.94			Thermal Gen:	670.54	88.8572	132.52	
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.41	0.0254	61.52	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.01	0.0006	100.00	
Total:	670.94	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	670.96	88.8831	132.47	
				System Net:		88.8831	132.47	
				LOLH(hr):	0.19			

Year: 2009 Month: Nov

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	63.4	275.8512	2778.2	1.	0.0000	44.5030	0.0000	161.33
2 Waiau	27.4	93.3668	1081.2	112.	0.0000	17.3905	0.0000	186.26
3 Kalaeloa	87.9	131.7106	1130.4	18.	0.0000	19.3240	0.0000	146.72
4 AES	98.8	128.0016	2217.9	0.	0.0000	3.6671	0.0000	28.65
5 HPOWER	85.6	28.3450	238.9	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	9.5	7.3982	96.9	27.	0.0000	1.6003	0.0000	216.31
8 CIP	6.9	5.5913	97.4	22.	0.0000	2.3034	0.0000	411.96
9 DG Sub	1.3	0.2751	2.9	12.	0.0000	0.0688	0.0000	249.93

Year: 2009 Month: Nov

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
28.390329	42.099892	18.366711	88.856934

Year: 2009 Month: Dec

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup M\$	Cst M\$	Fuel M\$	VO&M Cst M\$	FO&M Cst M\$	Oper Cst \$/MWh	Tot Cst \$/MWh
1 Honolulu 8	53.4	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
2 Honolulu 9	54.4	1	169.2	9.87	3.995	53.2	18.	0.	0.0000	0.8789	0.0000	0.0000	0.0000	205.69	219.98
3 Waiiau 3	46.6	1	60.2	5.42	1.879	26.1	10.	0.	0.0000	0.4182	0.0000	0.0000	0.0000	195.28	222.60
4 Waiiau 4	46.6	1	109.3	7.11	2.468	35.4	16.	0.	0.0000	0.5675	0.0000	0.0000	0.0000	195.92	229.98
5 Waiiau 5	54.5	1	375.4	21.25	8.620	113.2	30.	0.	0.0000	1.8134	0.0000	0.0000	0.0000	194.91	210.38
6 Waiiau 6	53.5	1	258.9	14.95	5.954	80.4	26.	0.	0.0000	1.2880	0.0000	0.0000	0.0000	196.62	216.31
7 Waiiau 7	82.9	1	698.6	48.13	29.704	324.7	0.	0.	0.0000	5.2012	0.0000	0.0000	0.0000	174.45	175.10
8 Waiiau 8	86.1	1	696.7	60.42	38.728	405.6	0.	0.	0.0000	6.4971	0.0000	0.0000	0.0000	167.22	167.76
9 Waiiau 9	52.9	1	5.7	0.11	0.044	1.5	2.	0.	0.0000	0.0355	0.0000	0.0000	0.0000	806.04	815.84
10 Waiiau 10	49.9	1	12.8	0.25	0.093	3.2	3.	0.	0.0000	0.0755	0.0000	0.0000	0.0000	800.17	808.78
11 Kahe 1	82.1	1	720.5	55.32	33.812	351.5	0.	0.	0.0000	5.6312	0.0000	0.0000	0.0000	166.28	166.54
12 Kahe 2	82.1	1	724.6	62.46	38.172	389.1	0.	0.	0.0000	6.2322	0.0000	0.0000	0.0000	163.01	163.27
13 Kahe 3	86.1	1	693.1	74.53	47.767	470.6	0.	0.	0.0000	7.5380	0.0000	0.0000	0.0000	157.37	157.81
14 Kahe 4	85.3	1	695.0	70.61	44.836	455.3	0.	0.	0.0000	7.2927	0.0000	0.0000	0.0000	162.20	162.65
15 Kahe 5	134.3	1	577.0	64.40	64.381	636.4	1.	0.	0.0000	10.1948	0.0000	0.0000	0.0000	157.14	158.35
16 Kahe 6	134.4	1	724.6	58.32	58.346	601.9	0.	0.	0.0000	9.6417	0.0000	0.0000	0.0000	164.97	165.25
17 Kala CC	90.0	1	637.7	83.87	56.194	484.6	8.	0.	0.0000	8.2846	0.0000	0.0000	0.0000	147.43	147.76
18 Kala CC	90.0	1	730.3	95.43	63.937	552.7	0.	0.	0.0000	9.4474	0.0000	0.0000	0.0000	147.76	147.76
19 AES	180.0	1	730.3	98.11	131.458	2277.8	0.	0.	0.0000	3.7661	0.0000	0.0000	0.0000	28.65	28.65
20 HPOWER	46.0	1	659.0	74.41	25.480	215.5	0.	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00
21 Kala CC	28.0	1	637.9	64.60	13.465	116.0	8.	0.	0.0000	1.9836	0.0000	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	46.7	2.17	1.824	31.9	7.	0.	0.0000	1.4817	0.0000	0.0000	0.0000	788.86	812.31
23 DG Sub1	9.8	1	10.4	0.70	0.052	0.5	2.	0.	0.0000	0.0129	0.0000	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	7.4	0.50	0.037	0.4	2.	0.	0.0000	0.0092	0.0000	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	8.1	0.56	0.041	0.4	2.	0.	0.0000	0.0102	0.0000	0.0000	0.0000	249.93	249.93
System					671.285	7628.	138.	0.	0.0000	88.3016	0.0000	0.0000	0.0000	130.53	131.54

Year: 2009    Month: Dec

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M\$	CAP Cost M\$	Total Cost M\$	Ave Cost M\$	Cost \$/MWh
1	Non-Firm	CONSTANT	0.405	0.0262	0.0000	0.0262		64.66
2	ArcherPV	HOURLY	0.019	0.0000	0.0000	0.0000		0.00

Year: 2009 Month: Dec

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	87.352	158.943	Bbl	985.4	15.7854	180.71	11281.	1601.85
2 KLSFO	287.315	468.516	Bbl	2904.8	46.5307	161.95	10110.	1601.85
3 HLSFO	3.995	8.581	Bbl	53.2	0.8789	219.98	13316.	1651.96
4 DG SUB	0.129	0.230	Bbl	1.3	0.0323	249.93	10409.	2401.05
5 WDIESEL	0.137	0.801	Bbl	4.7	0.1110	811.03	34288.	2365.31
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.458	2277.785	Bbl	2277.8	3.7661	28.65	17327.	165.34
8 KALAELOA	133.596	192.221	Bbl	1153.3	19.7156	147.58	8633.	1709.45
9 BIODIESEL	1.824	6.382	Bbl	31.9	1.4817	812.31	17493.	4643.68
10 REFUSE	25.480	34.753	Bbl	215.5	0.0000	0.00	8456.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M\$	Fuel Cost \$/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	378.661	636.040	Bbl	3943.4	63.1949	166.89	10414.	1602.5
2 DIESEL	0.137	0.801	Bbl	4.7	0.1110	811.03	34288.	2365.3
4 AES	131.458	2277.785	Bbl	2277.8	3.7661	28.65	17327.	165.3
5 KALAELOA	133.596	192.221	Bbl	1153.3	19.7156	147.58	8633.	1709.4
6 BIODIESEL	1.824	6.382	Bbl	31.9	1.4817	812.31	17493.	4643.7
7 REFUSE	25.480	34.753	Bbl	215.5	0.0000	0.00	8456.	0.0
9 DG SUB	0.129	0.230	Bbl	1.3	0.0323	249.93	10409.	2401.1

Year: 2009 Month: Dec

System Energy and Cost Summary

	Demand	Cost M\$	Cost \$/MWh		Supply	Cost M\$	Cost \$/MWh	
	GWh				GWh			
Load:	671.72			Thermal Gen:	671.29	88.3016131.54		
P-S Pumping:	0.00			Hydro Gen:	0.00	0.0000	0.00	
P-S Payback:	0.00			P-S Gen:	0.00	0.0000	0.00	
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.42	0.0262	61.75	
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00	
Unit Sale:	0.00	0.0000	0.00	Rej. Fuel:		0.0000		
Transm Loss:	0.00			Dsm Reductn:	0.00			
Dsm Load:	0.00			Emerg Purc:	0.00	0.0000	0.00	
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00	
Total:	671.72	0.0000	0.00	Lvl Cost:		0.0000		
				Total:	671.71	88.3278131.50		
				System Net:		88.3278131.50		
				LOLH(hr):	0.00			



Year: 2009 Month: Dec

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M\$	Fuel Cst M\$	O&M Cst M\$	Tot Cst \$/MWh
1 Kahe	63.9	287.3147	2904.8	2.	0.0000	46.5307	0.0000	161.95
2 Waiau	24.9	87.4885	990.1	87.	0.0000	15.8964	0.0000	181.70
3 Kalaeloa	86.3	133.5960	1153.3	16.	0.0000	19.7156	0.0000	147.58
4 AES	98.2	131.4577	2277.8	0.	0.0000	3.7661	0.0000	28.65
5 HPOWER	74.5	25.4801	215.5	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	5.0	3.9952	53.2	18.	0.0000	0.8789	0.0000	219.98
8 CIP	2.2	1.8241	31.9	7.	0.0000	1.4817	0.0000	812.31
9 DG Sub	0.6	0.1292	1.3	7.	0.0000	0.0323	0.0000	249.93

Year: 2009 Month: Dec

Monthly Fuel & Var O&M Cost by Subperiod (M\$)

Off Peak	Shoulder Peak	Priority Peak	Total
29.337481	40.845612	18.118181	88.301277

[illegible]

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Report Control Summary

YR	PRD	FiscalYr	PrdCntrl	YrCntrl	AllocFile	stnRept	PltRept	AreaRept	PSRept	DiagRept	HrInfFile	MonInfFile	YrInfFile	I26
2009	1	12	2	0	0	1	1	0	0	1	1	1	1	0

Area Summary

ID	NAME	YR	PRD	SpInRsv	SpInRsv	LdAdj	LdAdj	Tie	Tie	Cost	Cost	Tie
				PC	MW	PC	MW	PC	MW	Cost	Cost	Cost
1	Heco	2009	1	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0

Plant Summary

ID	NAME	YR	PRD	X31	X32	X33	X34	X35
1	Kahe	2009	1	0.00	0.00	0.00	0.00	0.00
2	Waiau	2009	1	0.00	0.00	0.00	0.00	0.00
3	Kalahele	2009	1	0.00	0.00	0.00	0.00	0.00
4	AES	2009	1	0.00	0.00	0.00	0.00	0.00
5	HPOWER	2009	1	0.00	0.00	0.00	0.00	0.00
6	Honolulu	2009	1	0.00	0.00	0.00	0.00	0.00
8	CIP	2009	1	0.00	0.00	0.00	0.00	0.00
9	DG Sub	2009	1	0.00	0.00	0.00	0.00	0.00

Fuel Class Summary

ID	NAME	YR	PRD	FuelUnit
1	LSFO	2009	1	1
2	DIESEL	2009	1	1
4	AES	2009	1	1
5	KALAELOA	2009	1	1
6	BIODIESEL	2009	1	1
7	REFUSE	2009	1	1
9	DG SUB	2009	1	1

Spot Fuel Summary

ID	NAME	YR	PRD	FuelClass	FuelCost	QtyCost	CostBac	HeatCont	Sox	CO2	ROG	Other
1	WLSFO	2009	1	1	1601.9	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
2	KLISO	2009	1	1	1601.9	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
3	HLISO	2009	1	1	1652.0	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
4	DG SUB	2009	1	9	2401.1	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
5	WDIESEL	2009	1	2	2365.3	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
7	RES	2009	1	4	165.3	0.0	0.0	1	0.0000	0.0000	0.0000	0.0000
8	KALAELOA	2009	1	5	1709.5	0.0	0.0	6	0.0000	0.0000	0.0000	0.0000
9	BIODIESEL	2009	1	6	4643.7	0.0	0.0	5	0.0000	0.0000	0.0000	0.0000
10	REFUSE	2009	1	7	0.0	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
12	CDIESEL	2009	1	2	2365.3	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000

# Thermal Basic Summary

ID	NAME	YR	PRD	Area	Plant	ID	Units	Hr	Pattern	Branching	Firm	OpType	Quick	Derate	EngLmt	Ramp	Down	Up	SpinRev	Ownership	CmtCost	CmtEmis	DepCost	DepEmis	Scrub	Util
1	Honolu 8	2009	1	1	6	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
2	Honolu 9	2009	1	1	6	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
3	Waiau 3	2009	1	1	2	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
4	Waiau 4	2009	1	1	2	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
5	Waiau 5	2009	1	1	2	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
6	Waiau 6	2009	1	1	2	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
7	Waiau 7	2009	1	1	2	1	0	0	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
8	Waiau 8	2009	1	1	2	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
9	Waiau 9	2009	1	1	2	1	0	0	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
10	Waiau 10	2009	1	1	2	1	0	0	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
11	Kahe 1	2009	1	1	1	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
12	Kahe 2	2009	1	1	1	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
13	Kahe 3	2009	1	1	1	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
14	Kahe 4	2009	1	1	1	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
15	Kahe 5	2009	1	1	1	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
16	Kahe 6	2009	1	1	1	1	0	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
17	Kaia CC	2009	1	1	3	1	1	-2	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
18	Kaia CC	2009	1	1	3	1	-3	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
19	AES	2009	1	1	4	1	-5	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
20	HPOWER	2009	1	1	5	1	-1	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
21	Kaia CC	2009	1	1	3	1	-4	0	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
22	CIP1	2009	8	1	8	1	0	0	0	0	0	4	0	0	0	9999	1	1	100.0	100.0	1	0	1	0	0.0	0
23	DG Sub1	2009	1	1	9	1	0	0	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
24	DG Sub2	2009	1	1	9	1	0	0	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
25	DG Sub3	2009	1	1	9	1	0	0	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0



### Thermal Cost and Variable Summary

ID	NAME	YR	PRD	SpotF uel	Start Fuel	Start BTU	StnEng	VarOM	FixOM	Fix	CapCost	VarOM Esc	FixOM Esc	Cost Cnt	Dep Pnlty	Cnt Pnlty	Trans Loss	Start Cost	HRVarOM	I26	X31	X32
1	Honolu 8	2009	1	3	3	190.0	0	0.00	0	0	0.00	0.0	0.0	0	0.99700	0.99700	1.00000	0	0.00	0	0	0
2	Honolu 9	2009	1	3	3	190.0	0	0.00	0	0	0.00	0.0	0.0	0	0.99700	0.99700	1.00000	0	0.00	0	0	0
3	Waiau 3	2009	1	1	1	337.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00600	1.00600	1.00000	0	0.00	0	0	0
4	Waiau 4	2009	1	1	1	337.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00600	1.00600	1.00000	0	0.00	0	0	0
5	Waiau 5	2009	1	1	1	277.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
6	Waiau 6	2009	1	1	1	277.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
7	Waiau 7	2009	1	1	1	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
8	Waiau 8	2009	1	1	1	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
9	Waiau 9	2009	1	5	5	11.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
10	Waiau 10	2009	1	5	5	11.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
11	Kahe 1	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
12	Kahe 2	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
13	Kahe 3	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
14	Kahe 4	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
15	Kahe 5	2009	1	2	2	4566.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
16	Kahe 6	2009	1	2	2	5274.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
17	Kaia CC	2009	1	8	8	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
18	Kaia CC	2009	1	8	8	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
19	AES	2009	1	7	7	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
20	HPOWER	2009	1	10	10	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0
21	Kaia CC	2009	1	8	8	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
22	CIP1	2009	8	12	12	126.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
22	CIP1	2009	12	9	9	126.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
22	CIP1	2010	1	9	9	126.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
23	DG Sub1	2009	1	4	4	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0
24	DG Sub2	2009	1	4	4	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0
25	DG Sub3	2009	1	4	4	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0

Thermal Performance Summary

ID	NAME	YR	PRD	Cap1	Cap2	Cap3	Cap4	MinLdHR	HROption	HR1	HR2	HR3	FOR	MOR
1	Honolu 8	2009	1	22.3000000	32.7000000	43.1000000	53.4000000	0	1	36.4132000	10.3115000	0.0056800	11.73	0.00
2	Honolu 9	2009	1	22.3000000	33.0000000	43.7000000	54.4000000	0	1	69.8920000	8.9484000	0.0220400	11.73	0.00
3	Waiiau 3	2009	1	22.3000000	30.4000000	38.5000000	46.6000000	0	1	146.5394000	4.8113000	0.0854400	27.67	0.00
4	Waiiau 4	2009	1	22.3000000	30.4000000	38.5000000	46.6000000	0	1	49.4604000	9.3112000	0.0320300	13.06	0.00
5	Waiiau 5	2009	1	22.5000000	33.2000000	43.9000000	54.5000000	0	1	61.0595000	8.8137000	0.0298100	3.73	0.00
6	Waiiau 6	2009	1	22.5000000	32.8000000	43.1000000	53.5000000	0	1	64.1104000	8.7407000	0.0319900	3.73	0.00
7	Waiiau 7	2009	1	32.6000000	49.4000000	66.2000000	82.9000000	0	1	86.2107000	7.9405000	0.0196100	6.35	0.00
8	Waiiau 8	2009	1	32.8000000	50.6000000	68.4000000	86.1000000	0	1	86.8712000	8.0919000	0.0131500	6.35	0.00
9	Waiiau 9	2009	1	5.9000000	21.0000000	36.9000000	52.9000000	0	1	198.6939000	7.8497000	0.0292200	11.46	0.00
10	Waiiau 10	2009	1	5.9000000	19.9000000	34.9000000	49.9000000	0	1	191.3958000	7.2757000	0.0285100	11.46	0.00
11	Kabe 1	2009	1	32.5000000	49.0000000	65.5000000	82.1000000	0	1	73.4991000	8.1733000	0.0129200	2.98	0.00
12	Kabe 2	2009	1	32.7000000	49.2000000	65.7000000	82.1000000	0	1	46.0037000	9.0952000	0.0035000	2.98	0.00
13	Kabe 3	2009	1	32.3000000	50.2000000	68.1000000	86.1000000	0	1	57.4864000	8.5169000	0.0063400	6.35	0.00
14	Kabe 4	2009	1	32.3000000	50.0000000	67.7000000	85.3000000	0	1	75.5539000	8.4394000	0.0073900	6.35	0.00
15	Kabe 5	2009	1	50.7000000	78.6000000	106.5000000	134.3000000	0	1	89.3444000	8.6434000	0.0030500	4.11	0.00
16	Kabe 6	2009	1	50.0000000	78.1000000	106.2000000	134.4000000	0	1	117.0609000	8.1819000	0.0076900	3.12	0.00
17	Kaia CC	2009	1	32.5000000	51.6700000	70.8333360	90.0000000	0	1	299.0258300	4.4054000	0.0093080	1.50	0.00
18	Kaia CC	2009	1	32.5000000	51.6700000	70.8333360	90.0000000	0	1	299.0258300	4.4054000	0.0093080	1.50	0.00
19	AES	2009	1	63.0000000	102.0000000	141.0000000	180.0000000	0	1	258.7479000	14.9713000	0.0051019	1.50	0.00
20	HPower	2009	1	25.0000000	32.0000000	39.0000000	46.0000000	0	1	10.0000000	8.2000000	0.0001000	11.60	0.00
21	Kaia CC	2009	1	0.1000000	9.3000000	18.7000000	28.0000000	0	1	0.0000010	8.6178000	0.0000010	1.50	0.00
22	CIP1	2009	8	39.0000000	64.0000000	88.0000000	113.0000000	0	1	317.8767817	8.8242222	0.0007403	4.00	0.00
23	DG Sub1	2009	1	4.9200000	6.5600000	8.2000000	9.8400000	0	1	0.0000001	10.4090000	0.0000001	50.00	0.00
24	DG Sub2	2009	1	4.9200000	6.5600000	8.2000000	9.8400000	0	1	0.0000001	10.4090000	0.0000001	50.00	0.00
25	DG Sub3	2009	1	4.9200000	6.5600000	8.2000000	9.8400000	0	1	0.0000001	10.4090000	0.0000001	50.00	0.00

Thermal Maintenance Summary

ID	NAME	YR	PRD	Start		Days
				Day	Day	
16	Kahe 6	2009	1	3		48
1	Honolu 8	2009	1	9		20
6	Waiau 6	2009	1	30		69
14	Kahe 4	2009	3	18		17
12	Kahe 2	2009	4	21		64
9	Waiau 9	2009	5	12		15
4	Waiau 4	2009	6	8		17
11	Kahe 1	2009	7	5		64
2	Honolu 9	2009	7	13		19
3	Waiau 3	2009	8	3		25
5	Waiau 5	2009	8	31		15
10	Waiau 10	2009	9	16		31
13	Kahe 3	2009	9	17		21
8	Waiau 8	2009	10	17		23
1	Honolu 8	2009	10	26		67
15	Kahe 5	2009	11	14		23
22	CIP1	2009	12	14		17

## Fixed Energy Transaction Summary

ID	NAME	YR	PRD	Area	Peak	Firm	MinCap	MaxCap	Energy	Eng	Cost	CapCost	EngCost	CapCost	Eng	WkDays	WDPK	WDPK	WDPK	WEEK
					ID	Type	Def										Hr-1	Hr-1	Hr-1	Hrn
1	Non-Firm	2009	1	6	0	1	0.54	0.54	0.000	64.74	0.0	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	1	8	1	1	0.00	0.22	0.020	0.00	0.0	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	2	1	8	1	1	0.00	0.021	0.00	0.0	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	3	1	8	1	1	0.00	0.026	0.00	0.0	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	4	1	8	1	1	0.00	0.027	0.00	0.0	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	5	1	8	1	1	0.00	0.22	0.030	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	6	1	8	1	1	0.00	0.22	0.030	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	7	1	8	1	1	0.00	0.22	0.031	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	8	1	8	1	1	0.00	0.22	0.030	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	9	1	8	1	1	0.00	0.22	0.027	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	10	1	8	1	1	0.00	0.024	0.00	0.0	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	11	1	8	1	1	0.00	0.22	0.024	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	12	1	8	1	1	0.00	0.22	0.020	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24
2	ArcherFV	2009	12	1	8	1	1	0.00	0.22	0.019	0.00	0.0	0.0	0.0	0.0	7	1	24	1	24

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
1/1/09	744.2	738.2	701.6	652.8	628.5	630.8	650.1	673.4	713.4	803.2	878.7	925.0	941.0	938.0	928.0	917.0	932.0	939.0	984.0	1022.0	976.0	940.0	876.0	785.0
1/2/09	708.0	659.0	632.0	619.0	625.0	666.0	756.0	855.0	915.0	974.0	1017.0	1057.0	1068.0	1069.0	1068.0	1051.0	1047.0	1032.0	1058.0	1086.0	1017.0	970.0	897.0	809.0
1/3/09	728.1	643.1	628.8	620.0	640.7	682.1	741.0	808.5	895.5	964.2	984.1	984.0	962.0	956.0	962.0	956.0	963.0	962.0	991.0	1051.0	994.0	938.0	874.0	804.0
1/4/09	722.7	671.8	639.6	623.9	616.0	626.9	655.8	693.2	753.1	829.7	896.6	928.5	934.0	927.0	923.0	923.0	945.0	972.0	1028.0	1072.0	1009.0	942.0	872.0	776.0
1/5/09	695.0	651.0	626.0	613.0	622.0	664.0	764.0	865.0	925.0	983.0	1036.0	1058.0	1069.0	1068.0	1051.0	1042.0	1038.0	1042.0	1096.0	1107.0	1042.0	967.0	870.0	764.0
1/6/09	693.0	636.0	611.0	600.0	611.0	659.0	753.0	853.0	938.0	957.0	1028.0	1065.0	1092.0	1096.0	1098.0	1097.0	1086.0	1072.0	1097.0	1156.0	1082.0	1004.0	909.0	802.0
1/7/09	711.0	660.0	642.0	620.0	626.0	672.0	770.0	876.0	933.0	967.0	1037.0	1074.0	1074.0	1077.0	1078.0	1088.0	1086.0	1064.0	1112.0	1153.0	1086.0	1013.0	922.0	810.0
1/8/09	721.0	672.0	642.0	631.0	637.0	681.0	792.0	908.0	950.0	1017.0	1070.0	1091.0	1093.0	1098.0	1096.0	1082.0	1077.0	1057.0	1079.0	1141.0	1082.0	1010.0	914.0	806.0
1/9/09	715.0	666.0	638.0	625.0	630.0	670.0	780.0	936.0	1004.0	1070.0	1094.0	1070.0	1064.0	1074.0	1064.0	1057.0	1041.0	1020.0	1026.0	1081.0	1009.0	955.0	885.0	798.0
1/10/09	717.5	665.1	632.9	616.0	612.8	624.2	662.5	721.0	794.5	875.3	925.2	946.3	950.0	940.0	923.0	911.0	918.0	924.0	946.0	1008.0	954.0	896.0	846.0	768.0
1/11/09	693.9	644.7	616.3	599.5	596.6	605.1	633.0	674.8	729.8	810.5	866.7	886.2	894.0	884.0	879.0	875.0	890.0	898.0	930.0	1010.0	952.0	892.0	841.0	760.0
1/12/09	681.3	638.3	612.5	600.4	600.4	628.0	683.8	751.2	808.5	902.1	972.4	988.3	1008.0	1009.0	1002.0	990.0	998.0	1003.0	1033.0	1103.0	1036.0	964.0	872.0	766.0
1/13/09	682.0	637.0	616.0	604.0	614.0	658.0	769.0	899.0	913.0	962.0	1002.0	1020.0	1032.0	1035.0	1032.0	1024.0	1021.0	1003.0	1019.0	1101.0	1024.0	954.0	870.0	758.0
1/14/09	672.8	628.8	608.7	598.2	602.7	644.7	753.1	877.1	893.4	941.3	968.9	987.6	988.0	996.0	1005.0	1004.0	1007.0	1002.0	1035.0	1107.0	1041.0	968.0	876.0	765.0
1/15/09	680.0	634.0	608.0	605.0	606.0	646.0	757.0	872.0	885.0	950.0	999.0	1009.0	1011.0	1021.0	1024.0	1027.0	1026.0	1008.0	1026.0	1097.0	1037.0	956.0	864.0	760.0
1/16/09	678.0	633.0	609.0	597.0	602.0	646.0	751.0	872.0	890.0	955.0	996.0	1004.0	1015.0	1025.0	1025.0	1021.0	1014.0	992.0	1001.0	1054.0	991.0	938.0	872.0	780.0
1/17/09	699.9	651.8	621.9	607.3	602.4	619.2	656.8	717.0	780.8	865.4	905.6	926.9	932.0	930.0	928.0	924.0	934.0	936.0	952.0	1021.0	964.0	908.0	837.0	759.0
1/18/09	680.0	634.1	604.6	587.5	582.8	590.0	616.9	652.3	711.8	797.6	855.8	881.4	898.0	901.0	902.0	899.0	909.0	925.0	958.0	1049.0	994.0	925.0	844.0	735.0
1/19/09	654.5	611.7	589.4	579.3	587.2	635.9	737.3	847.4	859.0	925.5	970.0	997.1	1015.0	1027.0	1026.0	1022.0	1017.0	1005.0	1031.0	1115.0	1043.0	962.0	861.0	742.0
1/20/09	659.4	615.6	593.0	584.3	591.6	637.5	747.5	873.9	896.6	952.7	979.4	992.4	1001.0	1005.0	995.0	988.0	981.0	978.0	1016.0	1089.0	1020.0	964.0	859.0	747.0
1/21/09	664.0	624.0	603.0	589.0	598.0	641.0	755.0	876.0	892.0	963.0	1003.0	1019.0	1030.0	1035.0	1033.0	1033.0	1030.0	1024.0	1043.0	1119.0	1053.0	965.0	881.0	765.0
1/22/09	677.0	633.0	608.0	597.0	603.0	646.0	751.0	872.0	883.0	949.0	997.0	1025.0	1032.0	1041.0	1036.0	1035.0	1028.0	1015.0	1026.0	1100.0	1044.0	965.0	873.0	762.0
1/23/09	679.0	633.0	607.0	594.0	603.0	648.0	761.0	880.0	897.0	967.0	1008.0	1020.0	1027.0	1037.0	1042.0	1025.0	1019.0	997.0	1002.0	1046.0	978.0	922.0	855.0	764.0
1/24/09	680.2	632.9	605.6	590.8	587.8	600.8	635.2	690.2	734.8	857.3	910.0	930.6	933.0	931.0	922.0	912.0	912.0	922.0	952.0	1007.0	954.0	920.0	853.0	770.0
1/25/09	701.6	652.9	601.6	590.8	601.0	611.6	639.7	680.0	768.0	825.8	887.9	917.6	927.0	924.0	924.0	918.0	930.0	947.0	998.0	1053.0	994.0	922.0	839.0	738.0
1/26/09	660.0	624.0	609.0	603.0	616.0	661.0	778.0	903.0	931.0	978.0	1002.0	1028.0	981.0	1035.0	992.0	1010.0	1011.0	1010.0	1019.0	1121.0	1064.0	983.0	888.0	766.0
1/27/09	687.0	641.0	612.0	604.0	626.0	675.0	783.0	915.0	941.0	997.0	1027.0	1036.0	1054.0	1064.0	1048.0	1049.0	1042.0	1044.0	1079.0	1121.0	1086.0	983.0	888.0	766.0
1/28/09	688.0	646.0	624.0	613.0	621.0	673.0	781.0	909.0	920.0	981.0	1035.0	1051.0	1068.0	1060.0	1058.0	1048.0	1033.0	1032.0	1060.0	1150.0	1089.0	1007.0	892.0	782.0
1/29/09	696.0	662.0	639.0	624.0	635.0	680.0	799.0	925.0	958.0	1019.0	1048.0	1072.0	1077.0	1079.0	1072.0	1070.0	1037.0	1025.0	998.0	1022.0	1058.0	930.0	842.0	739.0
1/30/09	659.8	597.5	579.7	573.8	582.6	620.8	729.8	838.5	848.8	904.8	953.7	945.1	941.4	942.2	932.5	938.4	933.8	916.7	919.5	971.6	915.5	864.8	800.6	719.6
1/31/09	656.4	604.4	580.2	565.7	562.9	576.9	611.7	667.2	737.1	815.7	860.2	867.9	872.4	859.8	845.8	838.6	840.6	846.8	865.8	937.9	893.7	845.4	786.7	711.3
2/1/09	654.0	611.4	585.9	572.5	569.4	578.3	600.7	636.2	698.1	785.2	845.0	874.5	890.9	885.8	859.7	847.3	846.0	851.8	896.0	966.6	915.9	826.4	722.7	727.0
2/2/09	644.0	607.0	589.0	582.0	588.0	633.0	734.0	864.0	883.0	945.0	998.0	1025.0	1039.0	1052.0	1059.0	1056.0	1053.0	1045.0	1069.0	1163.0	1102.0	1013.0	905.0	777.0
2/3/09	692.0	649.0	625.0	615.0	619.0	669.0	783.0	924.0	945.0	986.0	1012.0	1041.0	1067.0	1075.0	1075.0	1069.0	1072.0	1065.0	1085.0	1169.0	1096.0	1018.0	923.0	794.0
2/4/09	705.0	656.0	635.0	625.0	632.0	680.0	796.0	933.0	959.0	1014.0	1048.0	1055.0	1041.0	1035.0	1036.0	1017.0	1014.0	1025.0	1069.0	1125.0	1067.0	972.0	870.0	761.0
2/5/09	673.0	630.0	606.0	596.0	603.0	649.0	765.0	896.0	905.0	972.0	1014.0	1023.0	1021.0	1039.0	1003.0	986.0	993.0	993.0	1014.0	1100.0	1047.0	965.0	868.0	757.0
2/6/09	671.0	628.0	605.0	594.0	644.0	694.0	759.0	890.0	907.0	964.0	1007.0	1014.0	1004.0	1005.0	1000.0	980.0	973.0	960.0	991.0	1039.0	974.0	921.0	846.0	756.0
2/7/09	677.4	628.2	604.5	590.1	587.5	603.7	640.3	702.6	783.1	871.4	917.8	925.8	920.6	913.1	899.5	889.0	890.0	890.0	914.5	989.2	946.7	892.0	827.1	746.7
2/8/09	670.4	624.8	599.4	585.6	580.6	593.9	615.9	651.4	713.8	796.2	843.9	859.8	864.0	859.0	854.0	855.0	867.0	886.0	920.0	1023.0	980.0	910.0	825.0	723.0
2/9/09	642.0	603.0	584.0	576.0	587.0	632.0	740.0	862.0	881.0	945.0	980.0	1000.0	1013.0	1023.0	1026.0	1027.0	1023.0	1018.0	1035.0	1125.0	1071.0	986.0	880.0	765.0
2/10/09	675.0	629.0	607.0	597.0	602.0	646.0	754.0	875.0	924.0	984.0	1028.0	1039.0	1043.0	1057.0	1056.0	1061.0	1045.0	1044.0	1057.0	1138.0	1083.0	1005.0	905.0	783.0
2/11/09	689.0	643.0	620.0	609.0	614.0	661.0	768.0	887.0	910.0	967.0	1025.0	1047.0	1055.0	1067.0	1069.0	1064.0	1057.0	1043.0	1048.0	1118.0	1081.0	989.0	896.0	779.0
2/12/09	689.0	645.0	619.0	610.0	616.0	661.0	774.0	898.0	921.0	978.0	1028.0	1051.0	1071.0	1072.0	1065.0	1056.0	1048.0	1018.0	1028.0	1118.0	1080.0	1003.0	905.0	788.0
2/13/09	696.0	652.0	628.0	617.0	623.0	665.0	769.0	895.0	936.0	1009.0	1053.0	1064.0	1072.0	1079.0	1083.0	1077.0	1059.0	1038.0	1048.0	1109.0	1051.0	984.0	915.0	818.0
2/14/09	734.0	681.0	650.0	635.0	643.0	643.0	687.0	755.0	803.0	943.0	999.0	1018.0	1009.0	985.0	964.0	954.0	954.0	964.0	978.0	1026.0	985.0	932.0	866.0	783.0
2/15/09	707.7	655.4	628.1	610.4	607.5	616.0	644.9	672.3	751.5	828.1	884.6	902.2	903.0	892.1	886.6	885.1	886.0	912.8	930.8	988.4	947.7	898.4		

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
3/1/09	688.0	641.0	615.4	600.5	598.1	606.9	632.1	664.1	733.6	816.8	869.3	895.3	909.0	911.0	916.0	918.0	938.0	955.0	974.0	1060.0	1032.0	965.0	883.0	769.0
3/2/09	685.0	641.0	618.0	606.0	612.0	657.0	761.0	874.0	919.0	998.0	1042.0	1070.0	1086.0	1097.0	1094.0	1086.0	1095.0	1081.0	1089.0	1128.0	1101.0	1016.0	902.0	780.0
3/3/09	693.0	647.0	623.0	611.0	617.0	661.0	766.0	875.0	918.0	991.0	1026.0	1061.0	1080.0	1094.0	1086.0	1084.0	1090.0	1067.0	1065.0	1140.0	1088.0	1009.0	900.0	775.0
3/4/09	695.0	639.0	616.0	606.0	611.0	652.0	758.0	861.0	888.0	966.0	1009.0	1038.0	1056.0	1070.0	1079.0	1081.0	1084.0	1072.0	1068.0	1147.0	1105.0	1026.0	909.0	786.0
3/5/09	696.0	648.0	623.0	610.0	614.0	655.0	763.0	878.0	914.0	991.0	1037.0	1068.0	1081.0	1072.0	1062.0	1049.0	1044.0	1032.0	1033.0	1103.0	1071.0	1002.0	907.0	790.0
3/6/09	705.0	659.0	638.0	626.0	632.0	679.0	789.0	918.0	958.0	1027.0	1063.0	1081.0	1094.0	1105.0	1099.0	1086.0	1077.0	1061.0	1056.0	1106.0	1053.0	991.0	902.0	798.0
3/7/09	720.0	676.9	634.7	625.8	632.9	682.9	674.1	735.4	617.7	900.6	948.0	977.6	985.9	971.7	958.8	941.5	938.1	935.8	949.6	997.9	958.8	903.3	840.2	793.3
3/8/09	688.1	643.6	617.5	604.6	602.9	609.1	632.6	668.5	733.5	833.5	892.7	917.2	927.0	927.0	928.0	915.0	928.0	945.0	964.0	981.0	1072.0	1056.0	994.0	794.0
3/9/09	707.0	661.0	638.0	629.0	637.0	684.0	794.0	922.0	966.0	1036.0	1080.0	1102.0	1110.0	1124.0	1116.0	1111.0	1093.0	1079.0	1106.0	1155.0	1118.0	1032.0	927.0	801.0
3/10/09	712.0	667.0	643.0	635.0	641.0	686.0	805.0	937.0	971.0	1021.0	1035.0	1044.0	1030.0	1030.0	1037.0	1048.0	1041.0	1041.0	1058.0	1108.0	1055.0	988.0	899.0	783.0
3/11/09	700.6	656.2	633.0	623.4	630.8	673.0	781.4	904.9	926.7	962.3	989.5	996.7	989.0	1009.0	1030.0	1032.0	1039.0	1037.0	1036.0	1101.0	1080.0	1006.0	893.0	778.0
3/12/09	690.0	642.0	620.0	612.0	618.0	661.0	766.0	880.0	914.0	979.0	1028.0	1056.0	1060.0	1076.0	1071.0	1049.0	1055.0	1037.0	1039.0	1102.0	1067.0	992.0	893.0	773.0
3/13/09	683.0	638.0	615.0	605.0	610.0	651.0	750.0	857.0	909.0	998.0	1044.0	1066.0	1070.0	1071.0	1051.0	1044.0	1035.0	1011.0	1000.0	1044.0	1006.0	948.0	875.0	784.0
3/14/09	705.5	655.5	627.5	614.5	613.8	629.1	671.0	726.1	815.9	907.4	961.4	980.8	980.0	976.4	963.5	955.4	954.2	964.2	961.2	997.9	964.7	908.8	843.3	767.1
3/15/09	693.3	645.9	618.7	602.6	599.7	607.6	628.3	661.5	730.1	808.6	853.9	881.9	884.7	883.6	877.1	870.7	890.1	907.7	929.0	989.5	965.8	901.1	830.0	738.4
3/16/09	667.0	630.0	610.0	611.0	611.0	651.0	729.0	828.0	898.0	973.0	1023.0	1042.0	1056.0	1053.0	1053.0	1051.0	1044.0	1030.0	1035.0	1090.0	1049.0	960.0	862.0	754.0
3/17/09	671.0	632.0	611.0	602.0	606.0	644.0	725.0	820.0	891.0	959.0	1003.0	1017.0	1038.0	1037.0	1047.0	1051.0	1049.0	1027.0	1022.0	1085.0	1031.0	960.0	872.0	763.0
3/18/09	682.0	639.0	619.0	610.0	615.0	653.0	742.0	834.0	908.0	962.0	1004.0	1037.0	1036.0	1049.0	1052.0	1052.0	1053.0	1031.0	1036.0	1082.0	1044.0	979.0	875.0	770.0
3/19/09	690.0	648.0	623.0	614.0	618.0	656.0	745.0	841.0	913.0	987.0	1027.0	1048.0	1052.0	1055.0	1052.0	1044.0	1039.0	1016.0	1009.0	1062.0	1026.0	962.0	874.0	768.0
3/20/09	688.0	643.0	618.0	608.0	611.0	648.0	730.0	821.0	905.0	984.0	1032.0	1049.0	1061.0	1065.0	1060.0	1052.0	1044.0	1023.0	1036.0	1097.0	944.0	868.0	782.0	760.0
3/21/09	705.9	653.7	624.4	609.6	608.2	621.0	655.9	707.0	788.7	872.7	919.4	935.1	935.9	931.9	916.7	908.8	914.4	921.8	924.5	974.2	957.4	906.8	840.9	763.5
3/22/09	694.4	647.1	619.9	606.9	601.1	610.4	634.0	665.4	730.7	805.8	849.6	871.8	876.1	874.3	867.3	865.5	875.8	892.2	901.2	954.7	942.8	894.5	826.8	747.9
3/23/09	672.0	634.0	612.0	603.0	607.0	641.0	708.0	784.0	863.0	940.0	988.0	1016.0	1027.0	1030.0	1026.0	1023.0	1026.0	1025.0	1038.0	1090.0	1056.0	978.0	888.0	775.0
3/24/09	694.0	648.0	624.0	615.0	620.0	660.0	746.0	837.0	917.0	992.0	1039.0	1062.0	1081.0	1088.0	1089.0	1086.0	1068.0	1051.0	1058.0	1086.0	1031.0	966.0	878.0	771.0
3/25/09	696.0	651.0	624.0	619.0	622.0	656.0	738.0	819.0	902.0	980.0	1030.0	1060.0	1076.0	1084.0	1070.0	1060.0	1061.0	1048.0	1044.0	1088.0	1058.0	984.0	878.0	775.0
3/26/09	692.0	644.0	619.0	607.0	608.0	642.0	725.0	808.0	892.0	966.0	1027.0	1058.0	1062.0	1075.0	1070.0	1057.0	1042.0	1022.0	1016.0	1041.0	1019.0	950.0	857.0	760.0
3/27/09	677.9	635.3	611.7	597.6	600.4	635.3	710.0	795.0	871.8	946.1	969.5	997.9	1011.0	1011.0	1016.0	1009.0	1004.0	980.0	978.0	998.0	967.0	918.0	845.0	759.0
3/28/09	683.7	637.6	612.2	599.5	597.8	610.1	642.6	690.2	774.1	847.7	896.2	914.7	923.2	925.4	912.5	909.3	912.6	913.4	926.6	947.0	937.1	882.6	819.5	747.1
3/29/09	672.4	636.4	614.7	601.0	600.2	607.3	627.9	657.8	718.8	792.8	835.8	855.1	863.4	868.2	860.2	851.5	862.0	880.3	898.9	961.9	959.5	902.1	802.0	711.2
3/30/09	643.0	613.0	596.0	591.0	597.0	635.0	729.0	827.0	883.0	944.0	979.0	1000.0	1002.0	1008.0	1005.0	1002.0	995.0	982.0	986.0	1046.0	1026.0	948.0	834.0	726.0
3/31/09	651.2	616.5	597.9	591.3	595.9	630.4	721.0	812.3	861.1	921.6	948.0	970.5	982.0	994.0	992.0	994.0	981.0	965.0	964.0	1032.0	1016.0	936.0	828.0	724.0
4/1/09	644.1	620.7	609.3	604.0	607.1	631.2	703.5	806.4	833.9	895.4	940.4	961.4	979.0	1004.0	1010.0	1014.0	1005.0	970.0	979.0	1058.0	1046.0	962.0	829.0	721.0
4/2/09	658.4	625.3	613.0	606.0	608.6	630.1	702.6	792.0	842.4	919.1	957.0	988.4	988.0	1017.0	1017.0	1015.0	1022.0	997.0	980.0	1037.0	1017.0	933.0	826.0	726.0
4/3/09	657.0	627.3	613.6	606.6	608.3	623.9	660.7	718.1	794.6	884.6	942.3	978.4	983.0	986.0	987.0	991.0	991.0	994.0	993.0	1024.0	991.0	924.0	839.0	743.0
4/4/09	674.1	639.9	623.6	614.5	613.3	620.5	646.4	687.8	768.4	853.7	913.3	934.7	933.3	924.7	909.4	897.1	901.0	911.8	920.6	974.2	970.8	905.3	834.5	757.6
4/5/09	688.7	650.0	628.1	620.2	617.5	623.6	642.3	667.8	730.4	801.8	837.8	857.9	860.7	856.1	853.8	861.9	873.6	886.8	886.8	941.1	977.3	925.5	828.0	733.4
4/6/09	683.0	636.0	622.0	618.0	622.0	650.0	734.0	845.0	929.0	1007.0	1059.0	1112.0	1131.0	1152.0	1152.0	1149.0	1133.0	1104.0	1087.0	1167.0	1165.0	1046.0	898.0	755.0
4/7/09	681.0	649.0	633.0	627.0	630.0	659.0	752.0	872.0	927.0	1017.0	1074.0	1120.0	1131.0	1155.0	1149.0	1137.0	1110.0	1085.0	1095.0	1164.0	1115.0	1014.0	882.0	754.0
4/8/09	676.0	643.0	628.0	623.0	626.0	655.0	746.0	862.0	945.0	1037.0	1093.0	1129.0	1141.0	1150.0	1160.0	1160.0	1147.0	1115.0	1102.0	1150.0	1157.0	1010.0	897.0	768.0
4/9/09	683.0	648.0	633.0	626.0	628.0	655.0	745.0	867.0	932.0	1024.0	1091.0	1133.0	1128.0	1123.0	1093.0	1074.0	1082.0	1067.0	1068.0	1109.0	1118.0	1014.0	884.0	764.0
4/10/09	678.0	647.0	631.0	623.0	625.0	654.0	743.0	856.0	920.0	1002.0	1058.0	1091.0	1096.0	1112.0	1110.0	1102.0	1095.0	1046.0	1027.0	1047.0	1034.0	962.0	868.0	771.0
4/11/09	694.0	655.4	639.6	627.9	625.3	634.5	665.3	715.5	810.7	906.5	973.2	994.0	988.0	988.0	977.0	964.0	975.0	970.0	961.0	995.0	1000.0	928.0	851.0	764.0
4/12/09	692.6	655.4	636.0	624.2	620.5	628.9	645.0	671.9	738.5	818.8	876.4	900.7	914.0	917.0	912.0	913.0	924.0	948.0	968.0	1038.0	1056.0	965.0	849.0	745.0
4/13/09	672.0	644.0	628.0	623.0	628.0	658.0	753.0	869.0	928.0	1012.0	1071.0	1095.0	1115.0	1131.0	1121.0	1115.0	1104.0	1085.0	1043.0	1141.0	1139.0	1036.0	880.0	753.0
4/14/09	677.0	643.0	630.0	624.0	627.0	659.0	755.0	875.0	922.0	1012.0	1059.0	1093.0	1101.0	1095.0	1071.0	1065.0	1058.0	1036.0	1043.0	1131.0	1088.0	991.0	865.0	740.0
4/15/09	669.0	640.0	625.0	620.0	625.0	655.0	744.0	854.0	907.0	980.0	1030.0	1064.0	1068.0	1074.0	1081.0	1068.0	1064.0	1044.0	1040.0	1085.0	1096.0	972.0	857.0	737.0
4/16/09	686.0</																							

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24	
5/1/09	706.0	669.0	649.0	640.0	645.0	678.0	775.0	887.0	953.0	1018.0	1062.0	1076.0	1073.0	1072.0	1068.0	1072.0	1073.0	1052.0	1026.0	1019.0	1029.0	969.0	969.0	891.0	804.0
5/2/09	720.0	675.0	649.0	638.0	636.0	681.0	737.0	737.0	829.0	923.0	907.5	901.0	999.0	1003.0	980.0	981.0	975.0	971.0	953.0	975.0	1001.0	975.0	875.0	779.0	
5/3/09	719.0	675.0	651.2	633.9	640.6	654.9	695.4	695.4	769.8	850.8	922.5	925.6	938.0	941.0	947.0	951.0	954.0	966.0	972.0	999.0	1034.0	975.0	883.0	796.0	
5/4/09	698.0	663.0	642.0	636.0	641.0	677.0	768.0	872.0	946.0	1018.0	1048.0	1072.0	1083.0	1082.0	1077.0	1059.0	1048.0	1034.0	1031.0	1053.0	1085.0	998.0	886.0	771.0	
5/5/09	695.0	657.0	641.0	631.0	637.0	668.0	763.0	875.0	925.0	989.0	1031.0	1056.0	1065.0	1072.0	1076.0	1085.0	1082.0	1059.0	1041.0	1059.0	1082.0	1004.0	892.0	778.0	
5/6/09	701.0	665.0	644.0	635.0	640.0	676.0	767.0	880.0	937.0	1003.0	1051.0	1073.0	1070.0	1083.0	1092.0	1093.0	1079.0	1048.0	1033.0	1049.0	1080.0	991.0	889.0	773.0	
5/7/09	694.0	660.0	642.0	634.0	637.0	671.0	763.0	866.0	919.0	973.0	1016.0	1042.0	1052.0	1066.0	1060.0	1062.0	1058.0	1047.0	1023.0	1041.0	1062.0	982.0	876.0	769.0	
5/8/09	693.0	658.0	640.0	633.0	635.0	665.0	743.0	854.0	903.0	954.0	985.0	1003.0	1016.0	1027.0	1025.0	1030.0	1025.0	1003.0	964.0	975.0	982.0	923.0	852.0	770.0	
5/9/09	701.7	661.6	640.1	629.5	633.9	659.6	721.1	803.5	893.7	926.1	948.8	943.2	944.9	937.8	936.2	941.6	925.1	922.1	934.5	963.6	940.4	963.5	910.5	850.6	773.6
5/10/09	702.9	660.7	637.8	626.4	623.5	630.8	649.7	762.7	833.3	877.3	877.3	894.3	897.1	890.6	897.4	905.0	916.7	925.1	922.1	934.5	963.6	926.3	853.5	759.2	
5/11/09	694.0	647.0	632.0	628.0	628.0	661.0	747.0	856.0	938.0	1019.0	1068.0	1093.0	1109.0	1114.0	1111.0	1098.0	1079.0	1053.0	1041.0	1066.0	1093.0	1007.0	890.0	774.0	
5/12/09	694.0	659.0	641.0	635.0	637.0	670.0	757.0	865.0	942.0	1021.0	1065.0	1090.0	1109.0	1115.0	1109.0	1105.0	1096.0	1073.0	1051.0	1058.0	1085.0	1001.0	897.0	774.0	
5/13/09	692.0	658.0	639.0	631.0	635.0	668.0	755.0	865.0	938.0	1019.0	1063.0	1089.0	1111.0	1115.0	1121.0	1114.0	1111.0	1098.0	1069.0	1066.0	1105.0	1012.0	906.0	788.0	
5/14/09	702.0	663.0	644.0	634.0	636.0	663.0	756.0	868.0	940.0	1012.0	1059.0	1090.0	1098.0	1111.0	1108.0	1111.0	1115.0	1090.0	1058.0	1053.0	1098.0	1014.0	908.0	793.0	
5/15/09	707.0	668.0	648.0	637.0	642.0	674.0	764.0	885.0	957.0	1035.0	1085.0	1117.0	1129.0	1138.0	1136.0	1135.0	1120.0	1086.0	1055.0	1038.0	1034.0	972.0	892.0	793.0	
5/16/09	717.0	678.0	655.0	642.0	641.0	652.0	748.0	856.0	947.0	1001.0	1025.0	1033.0	1035.0	1035.0	1021.0	1022.0	1040.0	1030.0	1018.0	1018.0	1048.0	994.0	911.0	826.0	
5/17/09	740.5	692.3	665.9	651.7	647.0	654.7	671.0	717.0	797.3	877.5	944.4	977.1	989.0	994.0	999.0	1006.0	1022.0	1027.0	1031.0	1060.0	1106.0	1033.0	933.0	818.0	
5/18/09	724.0	683.0	658.0	651.0	655.0	689.0	786.0	908.0	1002.0	1080.0	1126.0	1145.0	1162.0	1173.0	1176.0	1175.0	1164.0	1148.0	1142.0	1155.0	1159.0	1059.0	932.0	813.0	
5/19/09	719.0	677.0	657.0	648.0	651.0	689.0	784.0	903.0	991.0	1068.0	1117.0	1145.0	1164.0	1179.0	1176.0	1173.0	1161.0	1136.0	1120.0	1126.0	1130.0	1062.0	927.0	809.0	
5/20/09	719.0	676.0	654.0	645.0	650.0	685.0	779.0	893.0	956.0	1029.0	1075.0	1101.0	1108.0	1117.0	1127.0	1136.0	1138.0	1118.0	1086.0	1077.0	1108.0	1025.0	929.0	809.0	
5/21/09	722.0	682.0	658.0	648.0	652.0	682.0	779.0	897.0	966.0	1038.0	1086.0	1104.0	1118.0	1132.0	1132.0	1139.0	1139.0	1112.0	1083.0	1079.0	1111.0	1040.0	927.0	806.0	
5/22/09	723.0	681.0	659.0	646.0	649.0	678.0	767.0	884.0	954.0	1002.0	1056.0	1086.0	1096.0	1102.0	1108.0	1104.0	1089.0	1060.0	1027.0	1001.0	1025.0	972.0	894.0	802.0	
5/23/09	727.3	681.8	657.1	644.1	640.8	650.5	675.7	737.2	831.3	921.4	970.7	988.7	984.9	983.6	974.6	969.5	970.7	968.2	955.6	940.8	970.7	922.6	861.0	780.3	
5/24/09	710.0	668.2	645.5	632.7	629.9	635.8	649.8	688.1	758.7	832.0	883.1	905.3	917.8	927.4	934.7	937.1	949.4	954.4	943.2	943.2	974.6	928.6	865.3	791.6	
5/25/09	714.7	675.7	652.9	642.5	640.8	653.5	677.0	721.7	793.5	883.1	944.4	973.3	982.0	981.0	977.0	980.0	994.0	1004.0	1007.0	1011.0	1070.0	1015.0	908.0	789.0	
5/26/09	709.0	670.0	649.0	641.0	646.0	678.0	765.0	881.0	968.0	1053.0	1106.0	1141.0	1151.0	1176.0	1175.0	1175.0	1171.0	1126.0	1112.0	1090.0	1139.0	1049.0	930.0	806.0	
5/27/09	719.0	678.0	656.0	648.0	652.0	685.0	771.0	889.0	960.0	1059.0	1108.0	1145.0	1161.0	1189.0	1175.0	1175.0	1167.0	1161.0	1130.0	1104.0	1147.0	1073.0	957.0	825.0	
5/28/09	722.0	682.0	658.0	648.0	652.0	682.0	775.0	897.0	977.0	1049.0	1098.0	1141.0	1144.0	1164.0	1171.0	1178.0	1167.0	1142.0	1090.0	1037.0	1053.0	994.0	911.0	815.0	
5/29/09	735.0	688.0	665.0	654.0	655.0	685.0	776.0	900.0	977.0	1093.0	1129.0	1035.0	1038.0	1033.0	1031.0	1033.0	1033.0	1023.0	1002.0	982.0	1014.0	968.0	893.0	807.0	
5/30/09	731.0	685.0	657.0	645.0	640.0	650.0	735.0	841.0	933.0	997.0	1029.0	1035.0	1038.0	993.0	993.0	1001.0	1008.0	1014.0	1014.0	1080.0	1029.0	933.0	821.0	749.0	
5/31/09	726.7	678.4	655.1	639.6	635.3	641.9	654.9	698.7	777.2	865.3	919.9	953.4	976.0	982.0	993.0	1001.0	1008.0	1014.0	1014.0	1080.0	1029.0	933.0	821.0	749.0	
6/1/09	753.0	701.0	675.0	658.0	665.0	715.0	816.0	931.0	995.0	1060.0	1104.0	1129.0	1140.0	1151.0	1148.0	1148.0	1135.0	1110.0	1094.0	1079.0	1092.0	1036.0	948.0	839.0	
6/2/09	747.0	698.0	667.0	653.0	662.0	730.0	832.0	952.0	1031.0	1100.0	1138.0	1160.0	1169.0	1182.0	1164.0	1163.0	1192.0	1181.0	1163.0	1149.0	1113.0	1138.0	1080.0	872.0	
6/3/09	771.0	716.0	682.0	665.0	672.0	780.0	805.0	936.0	1009.0	1066.0	1101.0	1136.0	1150.0	1161.0	1163.0	1163.0	1162.0	1144.0	1127.0	1103.0	1126.0	1066.0	979.0	868.0	
6/4/09	770.0	721.0	689.0	676.0	678.0	722.0	818.0	929.0	1006.0	1062.0	1103.0	1125.0	1134.0	1140.0	1148.0	1152.0	1148.0	1130.0	1102.0	1081.0	1110.0	1057.0	975.0	866.0	
6/5/09	773.0	714.0	682.0	662.0	666.0	704.0	790.0	899.0	1001.0	1070.0	1116.0	1136.0	1143.0	1151.0	1148.0	1145.0	1141.0	1125.0	1094.0	1061.0	1079.0	1029.0	959.0	866.0	
6/6/09	782.0	721.0	687.0	669.0	664.0	679.0	714.0	781.0	884.0	968.0	1014.0	1036.0	1034.0	1032.0	1018.0	1015.0	1016.0	1020.0	1009.0	1001.0	1023.0	986.0	923.0	850.0	
6/7/09	767.0	709.2	677.2	656.5	650.6	662.9	680.3	734.8	822.2	897.2	948.1	975.1	982.0	984.0	988.0	996.0	1001.0	1009.0	1006.0	996.0	1038.0	1003.0	937.0	846.0	
6/8/09	757.0	703.0	684.0	659.0	652.0	690.0	752.0	841.0	939.0	1016.0	1066.0	1094.0	1102.0	1105.0	1109.0	1102.0	1104.0	1102.0	1085.0	1070.0	1096.0	1044.0	960.0	847.0	
6/9/09	755.0	702.0	671.0	659.0	662.0	708.0	790.0	896.0	979.0	1042.0	1083.0	1110.0	1123.0	1133.0	1138.0	1142.0	1132.0	1105.0	1089.0	1071.0	1101.0	1045.0	957.0	850.0	
6/10/09	759.0	702.0	668.0	654.0	657.0	700.0	786.0	878.0	980.0	1050.0	1101.0	1126.0	1127.0	1132.0	1125.0	1123.0	1112.0	1095.0	1084.0	1067.0	1107.0	1047.0	964.0	848.0	
6/11/09	754.0	701.0	670.0	656.0	662.0	705.0	790.0	894.0	979.0	1035.0	1068.0	1080.0	1077.0	1089.0	1090.0	1091.0	1083.0	1069.0	1060.0	1050.0	1083.0	1034.0	952.0	845.0	
6/12/09	749.0	698.0	665.0	652.0	658.0	699.0	789.0	896.0	965.0	1036.0	1075.0	1101.0	1105.0	1123.0	1122.0	1122.0	1116.0	1089.0	1061.0	1031.0	1053.0	1007.0	940.0	857.0	
6/13/09	775.0	715.0	679.0	661.0	656.0	673.0	708.0	776.0	865.0	949.0	993.0	1009.0	1010.0	1001.0	990.0	991.0	994.0	993.0	978.0	967.0	1001.0	964.0	915.0	839.0	
6/14/09	757.6	702.2	667.5	646.4	640.3	652.8	675.0	731.3	817.5	890.5	938.6	957.6	968.0	972.0	983.0	988.0	996.0	1002.0	991.0	979.0	1017.0	993.0	929.0	838.0	
6/15/09	750.0	694.0	663.0	651.0	659.0	707.0	793.0	901.0																	

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24	
7/1/09	756.2	715.9	694.6	685.6	683.4	690.9	706.4	739.9	801.6	876.1	936.8	965.4	973.1	982.2	970.5	970.5	966.7	970.5	955.3	939.2	940.5	895.9	890.3	812.4
7/2/09	738.0	701.0	686.0	679.0	681.0	702.0	758.0	852.0	947.0	1051.0	1127.0	1159.0	1169.0	1199.0	1183.0	1185.0	1174.0	1137.0	1107.0	1075.0	1126.0	1055.0	943.0	830.0
7/3/09	748.0	711.0	693.0	686.0	684.0	704.0	764.0	860.0	952.0	1042.0	1107.0	1151.0	1159.0	1162.0	1163.0	1167.0	1154.0	1121.0	1083.0	1025.0	1054.0	998.0	908.0	814.0
7/4/09	756.2	715.9	694.6	685.6	683.4	690.9	706.4	739.9	801.6	876.1	936.8	965.4	973.1	982.2	970.5	970.5	966.7	970.5	955.3	939.2	940.5	895.9	890.3	812.4
7/5/09	739.2	704.1	684.0	675.2	672.5	676.8	687.4	711.9	765.6	834.9	892.3	924.0	937.0	949.0	954.0	960.0	976.0	986.0	983.0	981.0	1031.0	983.0	908.0	820.0
7/6/09	731.0	697.0	682.0	676.0	679.0	702.0	763.0	858.0	934.0	1039.0	1102.0	1143.0	1161.0	1172.0	1172.0	1172.0	1167.0	1145.0	1110.0	1080.0	1135.0	1052.0	938.0	819.0
7/7/09	745.0	706.0	690.0	683.0	686.0	712.0	776.0	873.0	957.0	1042.0	1107.0	1143.0	1172.0	1195.0	1200.0	1200.0	1202.0	1182.0	1143.0	1130.0	1175.0	1086.0	964.0	837.0
7/8/09	755.0	715.0	696.0	689.0	690.0	714.0	780.0	882.0	971.0	1038.0	1101.0	1146.0	1174.0	1187.0	1177.0	1185.0	1175.0	1148.0	1104.0	1105.0	1127.0	1051.0	943.0	827.0
7/9/09	746.0	710.0	693.0	686.0	690.0	712.0	780.0	873.0	957.0	1054.0	1106.0	1152.0	1175.0	1197.0	1172.0	1172.0	1162.0	1146.0	1121.0	1086.0	1129.0	1056.0	947.0	832.0
7/10/09	748.0	707.0	689.0	680.0	682.0	703.0	760.0	855.0	949.0	1034.0	1108.0	1150.0	1175.0	1197.0	1172.0	1172.0	1162.0	1146.0	1121.0	1086.0	1129.0	1056.0	947.0	832.0
7/11/09	752.0	711.0	693.0	683.0	679.0	688.0	707.0	753.0	831.0	915.0	986.0	1007.0	1070.0	986.0	978.0	957.0	959.0	963.0	955.0	982.0	943.0	883.0	808.0	740.0
7/12/09	743.9	706.5	687.6	679.8	679.8	681.5	690.6	715.4	773.2	842.2	896.2	918.0	932.0	928.0	928.0	932.0	945.0	964.0	973.0	977.0	1035.0	986.0	903.0	802.0
7/13/09	731.0	699.0	683.0	677.0	680.0	705.0	769.0	863.0	963.0	1042.0	1113.0	1151.0	1172.0	1183.0	1179.0	1174.0	1159.0	1140.0	1121.0	1101.0	1141.0	1061.0	939.0	821.0
7/14/09	741.0	706.0	688.0	682.0	683.0	706.0	770.0	862.0	955.0	1045.0	1095.0	1130.0	1151.0	1157.0	1161.0	1164.0	1172.0	1151.0	1129.0	1104.0	1151.0	1074.0	960.0	839.0
7/15/09	753.0	712.0	694.0	686.0	690.0	713.0	775.0	862.0	948.0	1044.0	1104.0	1140.0	1154.0	1179.0	1180.0	1182.0	1174.0	1151.0	1124.0	1102.0	1148.0	1081.0	965.0	843.0
7/16/09	758.0	716.0	698.0	689.0	691.0	713.0	780.0	872.0	964.0	1062.0	1143.0	1185.0	1198.0	1222.0	1224.0	1229.0	1227.0	1192.0	1141.0	1102.0	1141.0	1067.0	952.0	831.0
7/17/09	754.0	716.0	697.0	688.0	689.0	712.0	784.0	871.0	969.0	1056.0	1115.0	1154.0	1177.0	1220.0	1180.0	1179.0	1172.0	1133.0	1096.0	1061.0	1095.0	1025.0	945.0	842.0
7/18/09	767.0	726.0	705.0	693.0	690.0	718.0	769.0	858.0	958.0	950.0	1022.0	1045.0	1046.0	1039.0	1032.0	1025.0	1027.0	1027.0	1012.0	1003.0	1032.0	980.0	823.0	760.0
7/19/09	754.9	713.5	693.7	683.4	681.8	686.3	698.1	721.4	779.9	847.8	914.3	943.2	954.0	960.0	957.0	964.0	969.0	986.0	985.0	981.0	1020.0	973.0	889.0	795.0
7/20/09	730.0	699.0	685.0	679.0	680.0	704.0	767.0	858.0	972.0	1070.0	1130.0	1170.0	1195.0	1195.0	1190.0	1188.0	1183.0	1162.0	1127.0	1096.0	1135.0	1064.0	949.0	824.0
7/21/09	745.0	707.0	687.0	681.0	683.0	705.0	769.0	860.0	959.0	1052.0	1129.0	1161.0	1183.0	1198.0	1200.0	1207.0	1197.0	1177.0	1141.0	1101.0	1153.0	1072.0	949.0	830.0
7/22/09	745.0	710.0	691.0	683.0	684.0	706.0	768.0	857.0	953.0	1048.0	1116.0	1154.0	1172.0	1187.0	1192.0	1195.0	1190.0	1170.0	1132.0	1101.0	1145.0	1064.0	949.0	828.0
7/23/09	746.0	708.0	688.0	682.0	683.0	706.0	765.0	858.0	948.0	1038.0	1110.0	1157.0	1172.0	1190.0	1185.0	1180.0	1167.0	1133.0	1098.0	1061.0	1107.0	1038.0	933.0	818.0
7/24/09	742.0	703.0	688.0	680.0	681.0	701.0	761.0	848.0	959.0	1055.0	1121.0	1154.0	1170.0	1195.0	1190.0	1187.0	1167.0	1121.0	1075.0	1035.0	1062.0	1002.0	922.0	814.0
7/25/09	749.0	709.0	689.0	679.0	677.0	683.0	702.0	749.0	837.0	932.0	995.0	1034.0	1042.0	1032.0	1021.0	1020.0	1020.0	1020.0	1001.0	982.0	1025.0	972.0	820.0	814.0
7/26/09	745.0	706.1	687.4	677.3	675.0	678.7	689.1	711.5	771.0	842.2	901.6	936.2	949.0	963.0	971.0	969.0	982.0	1001.0	985.0	983.0	1044.0	991.0	805.0	740.0
7/27/09	728.0	699.0	681.0	675.0	676.0	698.0	758.0	849.0	950.0	1041.0	1116.0	1159.0	1185.0	1282.0	1207.0	1212.0	1196.0	1172.0	1129.0	1107.0	1153.0	1059.0	935.0	820.0
7/28/09	737.0	703.0	687.0	681.0	684.0	705.0	776.0	872.0	953.0	1048.0	1127.0	1164.0	1179.0	1207.0	1215.0	1215.0	1215.0	1183.0	1149.0	1121.0	1174.0	1078.0	954.0	825.0
7/29/09	745.0	708.0	690.0	683.0	685.0	710.0	794.0	906.0	991.0	1080.0	1135.0	1170.0	1190.0	1214.0	1226.0	1219.0	1222.0	1198.0	1172.0	1143.0	1192.0	1112.0	974.0	839.0
7/30/09	750.0	710.0	691.0	683.0	685.0	712.0	798.0	905.0	985.0	1078.0	1133.0	1162.0	1177.0	1187.0	1188.0	1187.0	1185.0	1161.0	1133.0	1105.0	1154.0	1062.0	948.0	821.0
7/31/09	742.0	706.0	689.0	681.0	683.0	707.0	789.0	887.0	985.0	1072.0	1126.0	1164.0	1177.0	1193.0	1192.0	1182.0	1182.0	1141.0	1148.0	1093.0	1065.0	1071.0	1001.0	917.0
8/1/09	747.0	710.0	698.0	691.0	698.0	710.0	738.0	788.0	890.0	987.0	1046.0	1106.0	1173.0	1189.0	1183.0	1193.0	1183.0	1164.0	1132.0	1128.0	1179.0	1103.0	989.0	863.0
8/2/09	789.0	743.0	716.0	701.0	697.0	704.0	721.0	754.0	828.0	910.0	970.0	1000.0	1018.0	1021.0	1028.0	1037.0	1051.0	1058.0	1057.0	1057.0	1113.0	1060.0	968.0	857.0
8/3/09	771.0	729.0	706.0	701.0	706.0	744.0	832.0	947.0	1023.0	1102.0	1164.0	1196.0	1219.0	1228.0	1229.0	1226.0	1216.0	1195.0	1172.0	1150.0	1198.0	1115.0	999.0	865.0
8/4/09	780.0	736.0	711.0	700.0	701.0	733.0	820.0	931.0	1006.0	1090.0	1143.0	1170.0	1191.0	1204.0	1202.0	1211.0	1205.0	1185.0	1150.0	1136.0	1183.0	1111.0	985.0	863.0
8/5/09	778.0	737.0	713.0	701.0	704.0	736.0	821.0	928.0	1004.0	1079.0	1133.0	1164.0	1185.0	1192.0	1207.0	1208.0	1193.0	1173.0	1138.0	1131.0	1162.0	1093.0	855.0	780.0
8/6/09	771.0	730.0	708.0	698.0	702.0	731.0	819.0	927.0	999.0	1081.0	1136.0	1173.0	1185.0	1192.0	1207.0	1213.0	1201.0	1182.0	1150.0	1133.0	1183.0	1106.0	966.0	864.0
8/7/09	776.0	735.0	711.0	701.0	703.0	735.0	823.0	937.0	999.0	1075.0	1133.0	1170.0	1191.0	1204.0	1210.0	1220.0	1210.0	1173.0	1149.0	1114.0	1126.0	1061.0	981.0	878.0
8/8/09	795.0	748.0	721.0	709.0	704.0	716.0	742.0	798.0	905.0	1010.0	1070.0	1095.0	1089.0	1093.0	1083.0	1079.0	1083.0	1078.0	1055.0	1052.0	1087.0	1037.0	967.0	877.0
8/9/09	796.0	748.0	721.0	707.0	702.0	710.0	728.0	758.0	835.0	920.0	982.0	1017.0	1023.0	1024.0	1026.0	1033.0	1051.0	1064.0	1065.0	1074.0	1120.0	1066.0	968.0	857.0
8/10/09	770.0	730.0	708.0	698.0	703.0	743.0	834.0	941.0	1017.0	1106.0	1154.0	1175.0	1195.0	1204.0	1199.0	1199.0	1195.0	1176.0	1156.0	1164.0	1189.0	1099.0	986.0	863.0
8/11/09	779.0	736.0	713.0	702.0	702.0	737.0	829.0	945.0	1019.0	1091.0	1139.0	1164.0	1173.0	1189.0	1183.0	1193.0	1183.0	1164.0	1132.0	1128.0	1179.0	1103.0	989.0	869.0
8/12/09	783.0	741.0	719.0	709.0	711.0	748.0	844.0	958.0	1015.0	1085.0	1124.0	1159.0	1160.0	1160.0	1154.0	1162.0	1150.0	1143.0	1128.0	1113.0	1147.0	1078.0	985.0	855.0
8/13/09	773.0	734.0	713.0	703.0	706.0	743.0	840.0	953.0	1021.0	1098.0	1145.0	1169.0	1182.0	1196.0	1196.0	1199.0	1189.0	1169.0	1129.0	1113.0	1140.0	1066.0	977.0	863.0
8/14/09	778.0	735.0	711.0	701.0	702.0	730.0	797.0	877.0	967.0	1065.0	1114.0	1139.0	1139.0	1149.0	1154.0	1150.0	1150.0	1135.0	1099.0	1083.0	1101.0	1033.0	954.0	872.0
8/15/09	795.0	746.0	722.0	709.0	703.0	71																		



Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
9/1/09	776.0	732.0	711.0	700.0	703.0	744.0	846.0	949.0	1019.0	1099.0	1145.0	1180.0	1199.0	1215.0	1224.0	1233.0	1222.0	1196.0	1158.0	1188.0	1187.0	1097.0	985.0	870.0
9/2/09	783.0	740.0	717.0	707.0	711.0	753.0	853.0	951.0	1026.0	1104.0	1150.0	1176.0	1187.0	1199.0	1203.0	1209.0	1203.0	1188.0	1155.0	1186.0	1179.0	1097.0	985.0	870.0
9/3/09	801.0	754.0	725.0	712.0	715.0	756.0	849.0	968.0	1035.0	1123.0	1180.0	1214.0	1229.0	1242.0	1240.0	1253.0	1242.0	1206.0	1187.0	1199.0	1207.0	1122.0	1011.0	888.0
9/4/09	785.0	736.0	710.0	698.0	701.0	736.0	831.0	931.0	1014.0	1099.0	1162.0	1202.0	1222.0	1239.0	1246.0	1256.0	1247.0	1211.0	1168.0	1192.0	1149.0	1085.0	998.0	903.0
9/5/09	814.0	758.0	731.0	723.0	713.0	759.0	820.0	922.0	1021.0	1081.0	1109.0	1120.0	1123.0	1113.0	1112.0	1119.0	1119.0	1107.0	1098.0	1137.0	1114.0	1054.0	989.0	902.0
9/6/09	812.0	758.0	728.0	707.0	700.0	707.0	729.0	763.0	847.0	936.0	998.0	1036.0	1050.0	1061.0	1061.0	1065.0	1077.0	1079.0	1072.0	1122.0	1122.0	1054.0	961.0	852.0
9/7/09	776.0	733.0	707.0	694.0	692.0	704.0	734.0	771.0	849.0	938.0	1006.0	1041.0	1054.0	1050.0	1056.0	1059.0	1067.0	1081.0	1083.0	1120.0	1133.0	1065.0	965.0	858.0
9/8/09	776.0	733.0	708.0	698.0	702.0	740.0	841.0	960.0	1006.0	1087.0	1145.0	1174.0	1192.0	1209.0	1214.0	1215.0	1209.0	1179.0	1147.0	1202.0	1183.0	1094.0	978.0	859.0
9/9/09	778.0	740.0	725.0	713.0	719.0	758.0	856.0	960.0	1023.0	1105.0	1155.0	1183.0	1188.0	1207.0	1214.0	1219.0	1214.0	1191.0	1140.0	1196.0	1167.0	1082.0	970.0	856.0
9/10/09	770.0	728.0	704.0	693.0	699.0	737.0	837.0	940.0	1005.0	1066.0	1099.0	1136.0	1160.0	1174.0	1182.0	1187.0	1183.0	1160.0	1132.0	1192.0	1162.0	1078.0	969.0	857.0
9/11/09	776.0	733.0	708.0	698.0	702.0	744.0	840.0	939.0	1008.0	1088.0	1151.0	1178.0	1192.0	1211.0	1221.0	1221.0	1206.0	1168.0	1131.0	1166.0	1117.0	1071.0	988.0	897.0
9/12/09	814.0	764.0	733.0	716.0	711.0	725.0	760.0	820.0	930.0	1013.0	1073.0	1103.0	1099.0	1099.0	1092.0	1060.0	1054.0	1044.0	1042.0	1094.0	1067.0	1017.0	953.0	871.0
9/13/09	792.0	747.0	718.0	702.0	700.0	709.0	737.0	766.0	845.0	923.0	979.0	1014.0	1024.0	1027.0	1024.0	1035.0	1038.0	1052.0	1060.0	1146.0	1119.0	1053.0	965.0	859.0
9/14/09	778.0	736.0	715.0	707.0	715.0	756.0	867.0	980.0	1050.0	1128.0	1179.0	1206.0	1222.0	1236.0	1242.0	1242.0	1222.0	1202.0	1192.0	1248.0	1115.0	997.0	874.0	870.0
9/15/09	789.0	747.0	721.0	728.0	731.0	775.0	886.0	996.0	1056.0	1132.0	1175.0	1198.0	1209.0	1222.0	1207.0	1207.0	1194.0	1163.0	1153.0	1190.0	1150.0	1067.0	961.0	846.0
9/16/09	771.0	720.0	710.0	700.0	706.0	747.0	852.0	958.0	1008.0	1079.0	1124.0	1150.0	1166.0	1174.0	1178.0	1182.0	1176.0	1154.0	1135.0	1202.0	1154.0	1074.0	967.0	853.0
9/17/09	790.0	747.0	722.0	713.0	719.0	763.0	875.0	980.0	1050.0	1123.0	1174.0	1198.0	1206.0	1213.0	1214.0	1209.0	1182.0	1172.0	1151.0	1209.0	1145.0	1074.0	962.0	870.0
9/18/09	782.0	740.0	714.0	705.0	709.0	750.0	852.0	957.0	1015.0	1090.0	1131.0	1153.0	1158.0	1170.0	1164.0	1155.0	1145.0	1118.0	1103.0	1137.0	1074.0	1022.0	952.0	868.0
9/19/09	791.0	741.0	714.0	701.0	697.0	712.0	753.0	811.0	911.0	998.0	1050.0	1077.0	1084.0	1079.0	1068.0	1071.0	1067.0	1056.0	1040.0	1083.0	1038.0	981.0	924.0	858.0
9/20/09	784.0	738.0	709.0	705.0	703.0	709.0	737.0	771.0	846.0	925.0	990.0	1024.0	1037.0	1043.0	1050.0	1059.0	1071.0	1076.0	1085.0	1163.0	1127.0	1061.0	967.0	860.0
9/21/09	761.0	720.0	700.0	691.0	698.0	740.0	840.0	942.0	1005.0	1078.0	1127.0	1155.0	1163.0	1176.0	1176.0	1178.0	1174.0	1151.0	1135.0	1214.0	1158.0	1074.0	965.0	846.0
9/22/09	766.0	724.0	704.0	693.0	698.0	737.0	845.0	948.0	1019.0	1093.0	1149.0	1164.0	1179.0	1203.0	1200.0	1198.0	1187.0	1163.0	1140.0	1211.0	1155.0	1072.0	965.0	855.0
9/23/09	773.0	736.0	710.0	702.0	707.0	745.0	855.0	956.0	1021.0	1081.0	1131.0	1147.0	1154.0	1166.0	1170.0	1174.0	1163.0	1137.0	1127.0	1122.0	1050.0	956.0	843.0	830.0
9/24/09	764.0	725.0	702.0	694.0	700.0	737.0	845.0	946.0	1013.0	1062.0	1109.0	1128.0	1133.0	1138.0	1157.0	1151.0	1150.0	1136.0	1119.0	1190.0	1133.0	1046.0	958.0	850.0
9/25/09	769.0	728.0	702.0	695.0	700.0	740.0	841.0	941.0	1003.0	1098.0	1154.0	1179.0	1188.0	1203.0	1203.0	1202.0	1188.0	1151.0	1128.0	1178.0	1114.0	1055.0	972.0	882.0
9/26/09	799.0	750.0	721.0	706.0	702.0	714.0	753.0	812.0	924.0	1026.0	1084.0	1119.0	1133.0	1132.0	1095.0	1094.0	1102.0	1090.0	1092.0	1147.0	1092.0	1041.0	967.0	888.0
9/27/09	811.0	760.0	730.0	713.0	710.0	719.0	746.0	781.0	864.0	942.0	993.0	1022.0	1031.0	1035.0	1037.0	1043.0	1054.0	1066.0	1076.0	1142.0	1097.0	1043.0	961.0	861.0
9/28/09	776.0	737.0	714.0	707.0	713.0	754.0	841.0	941.0	1015.0	1092.0	1144.0	1168.0	1172.0	1187.0	1194.0	1180.0	1167.0	1141.0	1122.0	1199.0	1132.0	1044.0	947.0	848.0
9/29/09	765.0	728.0	707.0	698.0	704.0	742.0	833.0	919.0	990.0	1077.0	1132.0	1162.0	1170.0	1167.0	1157.0	1154.0	1144.0	1112.0	1135.0	1188.0	1122.0	1033.0	949.0	844.0
9/30/09	765.0	724.0	704.0	695.0	702.0	741.0	828.0	911.0	990.0	1071.0	1108.0	1141.0	1155.0	1167.0	1162.0	1141.0	1123.0	1105.0	1107.0	1171.0	1104.0	1028.0	934.0	839.0
10/1/09	754.0	719.0	700.0	692.0	698.0	728.0	810.0	893.0	978.0	1062.0	1119.0	1159.0	1166.0	1168.0	1174.0	1163.0	1147.0	1127.0	1120.0	1181.0	1111.0	1029.0	930.0	830.0
10/2/09	755.0	718.0	701.0	692.0	696.0	726.0	807.0	883.0	972.0	1060.0	1108.0	1143.0	1153.0	1166.0	1162.0	1153.0	1142.0	1106.0	1098.0	1139.0	1054.0	997.0	920.0	841.0
10/3/09	766.0	728.0	707.0	690.0	690.0	702.0	732.0	782.0	862.0	945.0	1016.0	1029.0	1043.0	1038.0	1023.0	995.0	988.0	989.0	993.0	1051.0	1005.0	946.0	893.0	829.0
10/4/09	759.0	721.0	697.0	688.0	684.0	692.0	710.0	736.0	803.0	874.0	930.0	958.0	967.0	977.0	986.0	994.0	1003.0	1013.0	1029.0	1043.0	981.0	907.0	822.0	800.0
10/5/09	753.0	718.0	699.0	690.0	693.0	716.0	778.0	845.0	932.0	1030.0	1098.0	1135.0	1150.0	1160.0	1160.0	1159.0	1159.0	1145.0	1140.0	1230.0	1143.0	1055.0	937.0	832.0
10/6/09	756.0	720.0	702.0	693.0	698.0	732.0	825.0	927.0	1005.0	1072.0	1149.0	1186.0	1204.0	1224.0	1219.0	1227.0	1211.0	1177.0	1183.0	1252.0	1177.0	1068.0	949.0	840.0
10/7/09	761.0	723.0	704.0	696.0	700.0	735.0	834.0	941.0	1011.0	1094.0	1142.0	1163.0	1187.0	1202.0	1216.0	1227.0	1217.0	1186.0	1177.0	1255.0	1166.0	1068.0	945.0	830.0
10/8/09	751.0	716.0	698.0	690.0	693.0	724.0	818.0	929.0	988.0	1067.0	1122.0	1155.0	1175.0	1195.0	1201.0	1216.0	1199.0	1169.0	1162.0	1234.0	1166.0	1074.0	968.0	849.0
10/9/09	757.0	727.0	708.0	698.0	702.0	736.0	830.0	938.0	1000.0	1074.0	1132.0	1169.0	1196.0	1198.0	1201.0	1190.0	1180.0	1127.0	1098.0	1159.0	1071.0	1003.0	921.0	835.0
10/10/09	767.0	726.0	706.0	695.0	692.0	704.0	735.0	787.0	871.0	961.0	1025.0	1062.0	1059.0	1052.0	1039.0	1025.0	1027.0	1024.0	1030.0	1105.0	1042.0	983.0	912.0	837.0
10/11/09	764.0	723.0	702.0	692.0	686.0	697.0	717.0	746.0	817.0	899.0	961.0	995.0	1005.0	1008.0	1003.0	998.0	1003.0	1023.0	1051.0	1145.0	1086.0	1010.0	919.0	820.0
10/12/09	746.0	715.0	697.0	689.0	695.0	731.0	808.0	931.0	1008.0	1094.0	1149.0	1181.0	1186.0	1196.0	1198.0	1189.0	1189.0	1181.0	1160.0	1163.0	1250.0	1174.0	1074.0	942.0
10/13/09	753.0	716.0	700.0	690.0	694.0	729.0	826.0	933.0	1004.0	1084.0	1119.0	1120.0	1163.0	1193.0	1198.0	1205.0	1189.0	1162.0	1171.0	1241.0	1163.0	1064.0	946.0	832.0
10/14/09	758.0	719.0	702.0	693.0	695.0	733.0	834.0	938.0	1014.0	1090.0	1155.0	1181.0	1201.0	1220.0	1233.0	1233.0	1205.0	1183.0	1187.0	1260.0	1178.0	1075.0	961.0	838.0
10/15/09	757.0	721.0	703.0	694.0	696.0	732.0	826.0	934.0	1011.0	1093.0	1153.0	1184.0	1201.0	1216.0	1224.0	1231.0	1214.0	1177.0	1189.0	1260.0	1171.			

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
11/1/09	779.8	723.1	689.7	674.0	673.0	680.6	712.2	755.1	829.7	870.4	930.8	948.7	956.0	958.0	943.0	929.0	938.0	1004.0	1077.0	1049.0	984.0	970.0	843.0	760.0
11/2/09	690.0	649.0	631.0	625.0	636.0	691.0	798.0	910.0	983.0	1051.0	1097.0	1103.0	1125.0	1145.0	1146.0	1134.0	1116.0	1110.9	1165.0	1179.0	1102.0	1027.0	926.0	815.0
11/3/09	734.0	689.0	666.0	654.0	661.0	714.0	827.0	937.0	977.0	1057.0	1106.0	1144.0	1157.0	1170.0	1183.0	1181.0	1171.0	1163.0	1233.0	1249.0	1166.0	1063.0	955.0	835.0
11/4/09	745.0	700.0	677.0	666.0	673.0	721.0	839.0	949.0	997.0	1073.0	1130.0	1173.0	1191.0	1203.0	1219.0	1221.0	1206.0	1184.0	1249.0	1262.0	1191.0	1113.0	1007.0	879.0
11/5/09	783.0	731.0	704.0	691.0	695.0	742.0	858.0	968.0	1031.0	1115.0	1166.0	1197.0	1206.0	1239.0	1224.0	1221.0	1206.0	1184.0	1230.0	1243.0	1170.0	1083.0	984.0	870.0
11/6/09	777.0	732.0	687.0	683.0	687.0	732.0	838.0	940.0	1004.0	1083.0	1123.0	1138.0	1144.0	1151.0	1145.0	1139.0	1123.0	1099.0	1125.0	1131.0	1057.0	995.0	925.0	836.0
11/7/09	763.0	712.0	685.0	671.0	667.0	683.0	728.0	788.0	888.0	983.0	1027.0	1042.0	1047.0	1046.0	1034.0	1028.0	1030.0	1037.0	1051.0	1066.0	1010.0	961.0	910.0	841.0
11/8/09	766.1	712.4	679.8	663.2	657.3	668.9	697.4	741.2	823.2	907.7	963.6	992.2	1008.0	1009.0	1007.0	1013.0	1020.0	1021.0	1070.0	1100.0	1034.0	977.0	920.0	824.0
11/9/09	744.0	694.0	666.0	651.0	650.0	678.0	734.0	794.0	895.0	998.0	1070.0	1101.0	1124.0	1133.0	1138.0	1137.0	1146.0	1137.0	1201.0	1213.0	1128.0	1055.0	944.0	827.0
11/10/09	746.0	697.0	668.0	659.0	663.0	709.0	825.0	930.0	992.0	1069.0	1122.0	1153.0	1159.0	1178.0	1180.0	1177.0	1169.0	1137.0	1172.0	1209.0	1138.0	1047.0	949.0	832.0
11/11/09	748.0	697.0	677.0	664.0	668.0	718.0	833.0	943.0	1004.0	1058.0	1114.0	1139.0	1154.0	1166.0	1167.0	1163.0	1150.0	1132.0	1166.0	1192.0	1128.0	1048.0	952.0	835.0
11/12/09	750.0	705.0	676.0	666.0	668.0	714.0	825.0	932.0	986.0	1054.0	1103.0	1125.0	1123.0	1142.0	1151.0	1153.0	1144.0	1122.0	1154.0	1188.0	1117.0	1040.0	951.0	836.0
11/13/09	753.0	700.0	675.0	661.0	667.0	714.0	824.0	938.0	994.0	1073.0	1122.0	1144.0	1148.0	1160.0	1158.0	1158.0	1142.0	1117.0	1130.0	1098.0	1073.0	1002.0	958.0	863.0
11/14/09	771.0	719.0	684.0	668.0	662.0	678.0	718.0	778.0	874.0	968.0	1016.0	1040.0	1048.0	1047.0	1035.0	1025.0	1031.0	1025.0	1072.0	1060.0	1015.0	965.0	906.0	826.0
11/15/09	752.8	701.5	673.7	656.0	652.0	664.2	697.7	730.8	810.2	891.2	941.8	964.1	975.0	977.0	975.0	975.0	989.0	1006.0	1083.0	1094.0	1042.0	980.0	900.0	800.0
11/16/09	723.0	676.0	652.0	640.0	649.0	699.0	808.0	921.0	974.0	1050.0	1091.0	1116.0	1123.0	1136.0	1129.0	1110.0	1086.0	1083.0	1172.0	1157.0	1079.0	1017.0	911.0	804.0
11/17/09	721.0	676.0	654.0	642.0	653.0	700.0	812.0	917.0	951.0	1005.0	1044.0	1056.0	1065.0	1072.0	1073.0	1077.0	1072.0	1037.0	1099.0	1126.0	1060.0	990.0	900.0	798.0
11/18/09	716.0	667.0	638.0	626.0	634.0	679.0	783.0	886.0	936.0	1011.0	1057.0	1084.0	1095.0	1103.0	1100.0	1087.0	1078.0	1063.0	1105.0	1113.0	1052.0	989.0	924.0	830.0
11/19/09	745.0	691.0	657.0	641.0	637.0	654.0	695.0	741.0	827.0	934.0	998.0	1027.0	1035.0	1007.0	984.0	977.0	967.0	947.0	936.0	928.0	900.0	877.0	847.0	780.0
11/20/09	710.0	667.0	644.0	636.0	642.0	680.0	746.0	813.0	896.0	974.0	1010.0	1036.0	1046.0	1045.0	1037.0	1039.0	1034.0	1009.0	1063.0	1027.0	992.0	965.0	909.0	824.0
11/21/09	745.4	692.6	661.7	647.0	646.7	662.1	703.1	758.3	834.2	919.1	964.2	980.2	986.0	981.0	968.0	968.0	970.0	974.0	1028.0	1048.0	997.0	946.0	884.0	807.0
11/22/09	752.8	701.5	673.7	656.0	652.5	664.2	697.7	730.8	810.2	891.2	941.8	964.1	975.0	977.0	975.0	975.0	989.0	1006.0	1083.0	1094.0	1042.0	980.0	900.0	800.0
11/23/09	752.8	701.5	673.7	656.0	652.5	664.2	697.7	730.8	810.2	891.2	941.8	964.1	975.0	977.0	975.0	975.0	989.0	1006.0	1083.0	1094.0	1042.0	980.0	900.0	800.0
11/24/09	757.0	708.0	679.0	662.0	670.0	720.0	829.0	940.0	989.0	1075.0	1116.0	1136.0	1147.0	1163.0	1178.0	1176.0	1166.0	1144.0	1227.0	1226.0	1153.0	1068.0	977.0	860.0
11/25/09	771.0	718.0	689.0	675.0	681.0	718.0	826.0	950.0	991.0	1047.0	1061.0	1052.0	1068.0	1074.0	1069.0	1079.0	1067.0	1068.0	1144.0	1227.0	1226.0	1153.0	1068.0	977.0
11/26/09	745.0	691.0	657.0	641.0	637.0	654.0	695.0	743.0	827.0	934.0	998.0	1027.0	1035.0	1007.0	984.0	977.0	967.0	947.0	936.0	928.0	900.0	877.0	847.0	780.0
11/27/09	710.0	667.0	644.0	636.0	642.0	680.0	746.0	813.0	896.0	974.0	1010.0	1036.0	1046.0	1045.0	1037.0	1039.0	1034.0	1009.0	1063.0	1027.0	992.0	965.0	909.0	824.0
11/28/09	779.0	725.0	684.0	669.0	666.0	688.0	734.0	807.0	910.0	1005.0	1055.0	1083.0	1086.0	1081.0	1074.0	1064.0	1064.0	1060.0	1120.0	1105.0	1049.0	1011.0	941.0	900.0
11/29/09	821.0	749.0	708.0	686.0	683.0	694.0	726.0	771.0	842.0	935.0	983.0	1016.0	1031.0	1030.0	1032.0	1036.0	1038.0	1033.0	1113.0	1143.0	1085.0	1018.0	935.0	819.0
11/30/09	729.0	682.0	654.0	643.0	654.0	694.0	784.0	948.0	986.0	1028.0	1068.0	1081.0	1111.0	1120.0	1113.0	1130.0	1130.0	1120.0	1191.0	1219.0	1144.0	1075.0	981.0	853.0
12/1/09	766.0	708.0	674.0	662.0	678.0	746.0	881.0	1002.0	1039.0	1085.0	1127.0	1136.0	1144.0	1143.0	1131.0	1130.0	1130.0	1136.0	1202.0	1163.0	1126.0	1095.0	1013.0	895.0
12/2/09	778.9	726.5	691.3	678.0	691.3	749.9	663.1	763.8	813.8	869.5	910.1	944.9	951.0	961.0	985.0	994.0	1012.0	1009.0	1082.0	1079.0	1048.0	992.0	909.0	820.0
12/3/09	704.0	665.0	634.0	618.0	629.0	685.0	801.0	918.0	948.0	989.0	1034.0	1053.0	1067.0	1069.0	1064.0	1061.0	1060.0	1047.0	1103.0	1123.0	1070.0	936.0	832.0	760.0
12/4/09	736.0	677.0	639.0	638.0	638.0	692.0	817.0	936.0	966.0	1019.0	1042.0	1056.0	1056.0	1056.0	1041.0	1042.0	1044.0	1049.0	1093.0	1079.0	1030.0	989.0	935.0	845.0
12/5/09	766.0	699.0	659.0	641.0	640.0	664.0	718.0	791.0	882.0	971.0	1018.0	1038.0	1036.0	1028.0	1020.0	1017.0	1010.0	1019.0	1057.0	1072.0	1029.0	986.0	929.0	852.0
12/6/09	767.1	696.3	660.7	637.7	630.3	644.2	677.9	724.1	798.5	886.3	946.2	971.3	989.0	996.0	993.0	1000.0	1012.0	1025.0	1089.0	1118.0	1079.0	1020.0	938.0	825.0
12/7/09	725.0	662.0	646.0	631.0	643.0	712.0	832.0	947.0	979.0	1044.0	1088.0	1112.0	1117.0	1129.0	1133.0	1131.0	1128.0	1116.0	1169.0	1206.0	1146.0	1087.0	994.0	873.0
12/8/09	769.0	704.0	673.0	659.0	669.0	729.0	854.0	966.0	1001.0	1063.0	1094.0	1116.0	1112.0	1125.0	1121.0	1117.0	1114.0	1094.0	1139.0	1181.0	1129.0	1071.0	983.0	859.0
12/9/09	761.0	700.0	672.0	658.0	669.0	730.0	849.0	968.0	988.0	1048.0	1085.0	1105.0	1112.0	1114.0	1109.0	1111.0	1106.0	1097.0	1140.0	1171.0	1122.0	1063.0	983.0	865.0
12/10/09	765.0	708.0	672.0	655.0	667.0	729.0	859.0	976.0	989.0	1043.0	1077.0	1095.0	1092.0	1095.0	1091.0	1091.0	1085.0	1077.0	1120.0	1152.0	1104.0	1046.0	968.0	850.0
12/11/09	750.0	696.0	658.0	644.0	657.0	719.0	844.0	965.0	982.0	1029.0	1053.0	1064.0	1068.0	1070.0	1063.0	1060.0	1044.0	1044.0	1074.0	1092.0	1040.0	1006.0	947.0	861.0
12/12/09	773.0	706.0	667.0	642.0	642.0	663.0	716.0	789.0	878.0	960.0	999.0	1009.0	1010.0	997.0	977.0	968.0	971.0	958.0	1025.0	1042.0	996.0	962.0	912.0	837.0
12/13/09	749.1	680.8	636.7	614.5	611.7	626.8	666.8	716.8	785.3	869.8	922.5	933.6	942.0	941.0	929.0	937.0	951.0	967.0	1029.0	1074.0	1036.0	992.0	925.0	822.0
12/14/09	721.0	661.0	628.0	612.0	621.0	686.0	802.0	921.0	953.0	1008.0	1039.0	1052.0	1060.0	1060.0	1058.0	1051.0	1046.0	1038.0	1093.0	1132.0	1071.0	1029.0	945.0	830.0
12/15/09	723.0	664.0	630.0	613.0	622.0	684.0	809.0	920.0	949.0	992.0	1027.0	1029.0	1042.0	1045.0	1035.0	1035.0	1030.0	1030.0	1082.0	1122.0	1073.0	1014.0	944.0	833.0
12/16/09	735.0	670.0	635.0																					

## Quick Load Pick Up Summary

[illegible]

Operating Reserve Requirement

Year	Month	Day	Hour	Spin Req	Year	Month	Day	Hour	Spin Req	Year	Month	Day	Hour	Spin Req
2009	1	1	1	180	2009	1	3	15	180	2009	1	6	5	180
2009	1	1	2	180	2009	1	3	16	180	2009	1	6	6	180
2009	1	1	3	180	2009	1	3	17	180	2009	1	6	7	180
2009	1	1	4	180	2009	1	3	18	180	2009	1	6	8	180
2009	1	1	5	180	2009	1	3	19	180	2009	1	6	9	180
2009	1	1	6	180	2009	1	3	20	180	2009	1	6	10	180
2009	1	1	7	180	2009	1	3	21	180	2009	1	6	11	180
2009	1	1	8	180	2009	1	3	22	180	2009	1	6	12	180
2009	1	1	9	180	2009	1	3	23	180	2009	1	6	13	180
2009	1	1	10	180	2009	1	3	24	180	2009	1	6	14	180
2009	1	1	11	180	2009	1	4	1	180	2009	1	6	15	180
2009	1	1	12	180	2009	1	4	2	180	2009	1	6	16	180
2009	1	1	13	180	2009	1	4	3	180	2009	1	6	17	180
2009	1	1	14	180	2009	1	4	4	180	2009	1	6	18	180
2009	1	1	15	180	2009	1	4	5	180	2009	1	6	19	180
2009	1	1	16	180	2009	1	4	6	180	2009	1	6	20	180
2009	1	1	17	180	2009	1	4	7	180	2009	1	6	21	180
2009	1	1	18	180	2009	1	4	8	180	2009	1	6	22	180
2009	1	1	19	180	2009	1	4	9	180	2009	1	6	23	180
2009	1	1	20	180	2009	1	4	10	180	2009	1	6	24	180
2009	1	1	21	180	2009	1	4	11	180	2009	1	7	1	180
2009	1	1	22	180	2009	1	4	12	180	2009	1	7	2	180
2009	1	1	23	180	2009	1	4	13	180	2009	1	7	3	180
2009	1	1	24	180	2009	1	4	14	180	2009	1	7	4	180
2009	1	2	1	180	2009	1	4	15	180	2009	1	7	5	180
2009	1	2	2	180	2009	1	4	16	180	2009	1	7	6	180
2009	1	2	3	180	2009	1	4	17	180	2009	1	7	7	180
2009	1	2	4	180	2009	1	4	18	180	2009	1	7	8	180
2009	1	2	5	180	2009	1	4	19	180	2009	1	7	9	180
2009	1	2	6	180	2009	1	4	20	180	2009	1	7	10	180
2009	1	2	7	180	2009	1	4	21	180	2009	1	7	11	180
2009	1	2	8	180	2009	1	4	22	180	2009	1	7	12	180
2009	1	2	9	180	2009	1	4	23	180	2009	1	7	13	180
2009	1	2	10	180	2009	1	4	24	180	2009	1	7	14	180
2009	1	2	11	180	2009	1	5	1	180	2009	1	7	15	180
2009	1	2	12	180	2009	1	5	2	180	2009	1	7	16	180
2009	1	2	13	180	2009	1	5	3	180	2009	1	7	17	180
2009	1	2	14	180	2009	1	5	4	180	2009	1	7	18	180
2009	1	2	15	180	2009	1	5	5	180	2009	1	7	19	180
2009	1	2	16	180	2009	1	5	6	180	2009	1	7	20	180
2009	1	2	17	180	2009	1	5	7	180	2009	1	7	21	180
2009	1	2	18	180	2009	1	5	8	180	2009	1	7	22	180
2009	1	2	19	180	2009	1	5	9	180	2009	1	7	23	180
2009	1	2	20	180	2009	1	5	10	180	2009	1	7	24	180
2009	1	2	21	180	2009	1	5	11	180					
2009	1	2	22	180	2009	1	5	12	180					
2009	1	2	23	180	2009	1	5	13	180					
2009	1	2	24	180	2009	1	5	14	180					
2009	1	3	1	180	2009	1	5	15	180					
2009	1	3	2	180	2009	1	5	16	180					
2009	1	3	3	180	2009	1	5	17	180					
2009	1	3	4	180	2009	1	5	18	180					
2009	1	3	5	180	2009	1	5	19	180					
2009	1	3	6	180	2009	1	5	20	180					
2009	1	3	7	180	2009	1	5	21	180					
2009	1	3	8	180	2009	1	5	22	180					
2009	1	3	9	180	2009	1	5	23	180					
2009	1	3	10	180	2009	1	5	24	180					
2009	1	3	11	180	2009	1	6	1	180					
2009	1	3	12	180	2009	1	6	2	180					
2009	1	3	13	180	2009	1	6	3	180					
2009	1	3	14	180	2009	1	6	4	180					

Hourly Transaction Pattern 2

## Hourly Transaction Pattern 2

[illegible]

## Hourly Transaction Pattern 2

[illegible]

[illegible]



[illegible]

[illegible]

### Hourly Capacity Pattern 3

Yr	Prd	Day	Hr	Cap		OM
				Multiplier	Multiplier	
2009	1	1	1	1.0	1	1
2009	2	1	1	1.0	1	1
2009	3	1	1	1.0	1	1
2009	4	1	1	1.0	1	1
2009	4	12	1	0.0	1	1
2009	4	19	1	1.0	1	1
2009	4	24	21	0.0	1	1
2009	4	25	9	1.0	1	1
2009	5	1	1	1.0	1	1
2009	5	1	21	0.0	1	1
2009	5	2	9	1.0	1	1
2009	5	8	21	0.0	1	1
2009	5	9	9	1.0	1	1
2009	6	1	1	1.0	1	1
2009	7	1	1	1.0	1	1
2009	8	1	1	1.0	1	1
2009	9	1	1	1.0	1	1
2009	10	1	1	1.0	1	1
2009	10	17	21	0.0	1	1
2009	10	18	9	1.0	1	1
2009	10	24	1	0.0	1	1
2009	10	24	9	1.0	1	1
2009	11	1	1	1.0	1	1
2009	12	1	1	1.0	1	1

### Hourly Capacity Pattern 1

Yr	Prd	Day	Hr	Cap		OM
				Multiplier	Multiplier	
2009	1	1	1	1.0	1	1
2009	2	1	1	1.0	1	1
2009	3	1	1	1.0	1	1
2009	4	1	1	1.0	1	1
2009	5	1	1	1.0	1	1
2009	5	8	1	0.5	1	1
2009	5	15	1	0.0	1	1
2009	5	30	1	0.5	1	1
2009	6	1	1	0.5	1	1
2009	6	3	1	1.0	1	1
2009	7	1	1	1.0	1	1
2009	8	1	1	1.0	1	1
2009	9	1	1	1.0	1	1
2009	10	1	1	1.0	1	1
2009	11	1	1	1.0	1	1
2009	11	29	1	0.5	1	1
2009	12	1	1	0.5	1	1
2009	12	6	1	0.5	1	1
2009	12	11	1	1.0	1	1

### Hourly Capacity Pattern 5

Yr	Prd	Day	Hr	Cap		OM
				Multiplier	Multiplier	
2009	1	1	1	1.0	1	1
2009	2	1	1	1.0	1	1
2009	2	22	1	0.5	1	1
2009	3	1	1	0.5	1	1
2009	3	5	1	1.0	1	1
2009	4	1	1	1.0	1	1
2009	5	1	1	1.0	1	1
2009	6	1	1	1.0	1	1
2009	7	1	1	1.0	1	1
2009	8	1	1	1.0	1	1
2009	9	1	1	1.0	1	1
2009	10	1	1	1.0	1	1
2009	11	1	1	1.0	1	1
2009	12	1	1	1.0	1	1

## Hourly Capacity Pattern 2

Yr	Prd	Start Day	Hr	Cap Multiplier	OM	Yr	Prd	Start Day	Hr	Cap Multiplier	OM	Yr	Prd	Start Day	Hr	Cap Multiplier	OM
2009	1	1	21	1.0	1	2009	5	1	1	0.0	1	2009	8	15	21	0.0	1
2009	1	2	1	0.0	1	2009	5	12	1	1.0	1	2009	8	16	9	1.0	1
2009	1	3	9	1.0	1	2009	5	15	21	0.0	1	2009	8	21	21	0.0	1
2009	1	3	21	0.0	1	2009	5	16	9	1.0	1	2009	8	22	9	1.0	1
2009	1	4	9	1.0	1	2009	5	16	21	0.0	1	2009	8	22	21	0.0	1
2009	1	9	21	0.0	1	2009	5	17	9	1.0	1	2009	8	23	9	1.0	1
2009	1	10	9	1.0	1	2009	5	22	21	0.0	1	2009	8	28	21	0.0	1
2009	1	10	21	0.0	1	2009	5	23	9	1.0	1	2009	8	29	9	1.0	1
2009	1	11	9	1.0	1	2009	5	23	21	0.0	1	2009	8	29	21	0.0	1
2009	1	11	21	0.0	1	2009	5	24	9	1.0	1	2009	8	30	9	1.0	1
2009	1	16	21	0.0	1	2009	5	24	21	0.0	1	2009	8	30	21	0.0	1
2009	1	17	9	1.0	1	2009	5	29	9	1.0	1	2009	9	1	1	1.0	1
2009	1	17	21	0.0	1	2009	5	30	9	1.0	1	2009	9	4	21	0.0	1
2009	1	18	9	1.0	1	2009	5	30	21	0.0	1	2009	9	5	9	1.0	1
2009	1	18	21	0.0	1	2009	5	31	9	1.0	1	2009	9	5	21	0.0	1
2009	1	23	21	0.0	1	2009	6	1	1	1.0	1	2009	9	6	9	1.0	1
2009	1	24	9	1.0	1	2009	6	5	21	0.0	1	2009	9	11	21	0.0	1
2009	1	24	21	0.0	1	2009	6	6	9	1.0	1	2009	9	12	9	1.0	1
2009	1	25	9	1.0	1	2009	6	6	21	0.0	1	2009	9	12	21	0.0	1
2009	1	30	21	0.0	1	2009	6	7	9	1.0	1	2009	9	13	9	1.0	1
2009	1	31	9	1.0	1	2009	6	12	21	0.0	1	2009	9	18	21	0.0	1
2009	2	1	21	0.0	1	2009	6	13	9	1.0	1	2009	9	19	9	1.0	1
2009	2	1	9	1.0	1	2009	6	13	21	0.0	1	2009	9	19	21	0.0	1
2009	2	6	21	0.0	1	2009	6	14	9	1.0	1	2009	9	20	9	1.0	1
2009	2	7	9	1.0	1	2009	6	19	21	0.0	1	2009	9	25	21	0.0	1
2009	2	7	21	0.0	1	2009	6	20	9	1.0	1	2009	9	26	9	1.0	1
2009	2	8	9	1.0	1	2009	6	20	21	0.0	1	2009	9	26	21	0.0	1
2009	2	13	21	0.0	1	2009	6	21	9	1.0	1	2009	9	27	9	1.0	1
2009	2	14	9	1.0	1	2009	6	26	21	0.0	1	2009	10	1	1	1.0	1
2009	2	14	21	0.0	1	2009	6	27	9	1.0	1	2009	10	2	21	0.0	1
2009	2	15	9	1.0	1	2009	6	27	21	0.0	1	2009	10	3	9	1.0	1
2009	2	15	21	0.0	1	2009	6	28	9	1.0	1	2009	10	3	21	0.0	1
2009	2	20	21	0.0	1	2009	6	28	21	0.0	1	2009	10	4	9	1.0	1
2009	2	21	9	1.0	1	2009	7	1	1	1.0	1	2009	10	4	21	0.0	1
2009	2	21	21	0.0	1	2009	7	3	21	0.0	1	2009	10	9	21	0.0	1
2009	2	22	9	1.0	1	2009	7	4	9	1.0	1	2009	10	10	9	1.0	1
2009	2	22	21	0.0	1	2009	7	4	21	0.0	1	2009	10	10	21	0.0	1
2009	2	27	9	1.0	1	2009	7	5	9	1.0	1	2009	10	11	9	1.0	1
2009	2	28	21	0.0	1	2009	7	10	21	0.0	1	2009	10	17	1	0.0	1
2009	2	28	9	1.0	1	2009	7	11	9	1.0	1	2009	10	17	1	1.0	1
2009	3	1	1	0.0	1	2009	7	11	21	0.0	1	2009	10	19	1	1.0	1
2009	3	1	9	1.0	1	2009	7	11	21	0.0	1	2009	10	23	21	0.0	1
2009	3	6	21	0.0	1	2009	7	12	9	1.0	1	2009	10	24	1	0.0	1
2009	3	7	9	1.0	1	2009	7	12	21	0.0	1	2009	10	26	1	1.0	1
2009	3	7	21	0.0	1	2009	7	17	21	0.0	1	2009	10	26	1	1.0	1
2009	3	8	9	1.0	1	2009	7	18	9	1.0	1	2009	10	30	21	0.0	1
2009	3	8	21	0.0	1	2009	7	18	21	0.0	1	2009	10	31	9	1.0	1
2009	3	13	21	0.0	1	2009	7	19	9	1.0	1	2009	10	31	21	0.0	1
2009	3	14	9	1.0	1	2009	7	24	21	0.0	1	2009	11	1	1	0.0	1
2009	3	14	21	0.0	1	2009	7	25	9	1.0	1	2009	11	1	9	1.0	1
2009	3	15	9	1.0	1	2009	7	25	21	0.0	1	2009	11	6	21	0.0	1
2009	3	20	21	0.0	1	2009	7	26	9	1.0	1	2009	11	7	9	1.0	1
2009	3	21	9	1.0	1	2009	7	31	21	0.0	1	2009	11	7	21	0.0	1
2009	3	21	21	0.0	1	2009	8	1	1	0.0	1	2009	11	8	9	1.0	1
2009	3	22	9	1.0	1	2009	8	1	9	1.0	1	2009	11	13	21	0.0	1
2009	3	22	21	0.0	1	2009	8	1	21	0.0	1	2009	11	14	9	1.0	1
2009	3	27	9	1.0	1	2009	8	2	9	1.0	1	2009	11	14	21	0.0	1
2009	3	28	21	0.0	1	2009	8	7	21	0.0	1	2009	11	15	9	1.0	1
2009	3	28	9	1.0	1	2009	8	8	9	1.0	1	2009	11	20	21	0.0	1
2009	4	1	1	1.0	1	2009	8	8	21	0.0	1	2009	11	21	9	1.0	1
2009	4	3	21	0.0	1	2009	8	9	9	1.0	1	2009	11	21	21	0.0	1
2009	4	4	9	1.0	1	2009	8	14	21	0.0	1	2009	11	22	9	1.0	1
2009	4	5	1	0.0	1	2009	8	15	9	1.0	1	2009	11	27	21	0.0	1

Hourly Capacity Pattern 2 (continued)

Yr	Prd	Start Day	Hr	Cap Multiplier	Cap Multiplier	OM
2009	11	28	9	1.0	1	1
2009	11	28	21	0.0	1	1
2009	11	29	9	1.0	1	1
2009	12	1	1	1.0	1	1
2009	12	4	21	0.0	1	1
2009	12	5	9	1.0	1	1
2009	12	5	21	0.0	1	1
2009	12	6	9	1.0	1	1
2009	12	11	21	0.0	1	1
2009	12	12	9	1.0	1	1
2009	12	12	21	0.0	1	1
2009	12	13	9	1.0	1	1
2009	12	18	21	0.0	1	1
2009	12	19	9	1.0	1	1
2009	12	19	21	0.0	1	1
2009	12	20	9	1.0	1	1
2009	12	25	21	0.0	1	1
2009	12	26	9	1.0	1	1
2009	12	26	21	0.0	1	1
2009	12	27	9	1.0	1	1

# Hourly Capacity Pattern 4

Yr	Prd	Start		Cap	Multiplier	OM	Yr	Prd	Start		Cap	Multiplier	OM	Yr	Prd	Start		Cap	Multiplier	OM
		Day	Hr													Day	Hr			
2009	1	1	1	1.0	1	1	2009	5	1	1	1	0.0	1	2009	8	15	21	0.0	1	1
2009	1	2	21	0.0	1	1	2009	5	12	1	1.0	1	1	2009	8	16	9	1.0	1	1
2009	1	3	9	1.0	1	1	2009	5	15	21	0.0	1	1	2009	8	21	21	0.0	1	1
2009	1	3	21	0.0	1	1	2009	5	16	9	1.0	1	1	2009	8	22	9	1.0	1	1
2009	1	4	9	1.0	1	1	2009	5	16	21	0.0	1	1	2009	8	22	21	0.0	1	1
2009	1	9	21	0.0	1	1	2009	5	17	9	1.0	1	1	2009	8	23	9	1.0	1	1
2009	1	10	9	1.0	1	1	2009	5	22	21	0.0	1	1	2009	8	28	21	0.0	1	1
2009	1	10	21	0.0	1	1	2009	5	23	9	1.0	1	1	2009	8	29	9	1.0	1	1
2009	1	11	9	1.0	1	1	2009	5	23	21	0.0	1	1	2009	8	29	21	0.0	1	1
2009	1	11	21	0.0	1	1	2009	5	24	9	1.0	1	1	2009	8	30	9	1.0	1	1
2009	1	16	21	0.0	1	1	2009	5	29	21	0.0	1	1	2009	9	1	1	1.0	1	1
2009	1	17	9	1.0	1	1	2009	5	30	9	1.0	1	1	2009	9	4	21	0.0	1	1
2009	1	17	21	0.0	1	1	2009	5	30	21	0.0	1	1	2009	9	5	9	1.0	1	1
2009	1	18	9	1.0	1	1	2009	5	31	9	1.0	1	1	2009	9	5	21	0.0	1	1
2009	1	18	21	0.0	1	1	2009	5	31	21	0.0	1	1	2009	9	6	9	1.0	1	1
2009	1	23	21	0.0	1	1	2009	6	1	1	1.0	1	1	2009	9	11	21	0.0	1	1
2009	1	24	9	1.0	1	1	2009	6	5	21	0.0	1	1	2009	9	12	9	1.0	1	1
2009	1	24	21	0.0	1	1	2009	6	6	9	1.0	1	1	2009	9	12	21	0.0	1	1
2009	1	25	9	1.0	1	1	2009	6	6	21	0.0	1	1	2009	9	13	9	1.0	1	1
2009	1	30	21	0.0	1	1	2009	6	7	9	1.0	1	1	2009	9	13	21	0.0	1	1
2009	1	31	9	1.0	1	1	2009	6	12	21	0.0	1	1	2009	9	18	21	0.0	1	1
2009	1	31	21	0.0	1	1	2009	6	13	9	1.0	1	1	2009	9	19	9	1.0	1	1
2009	2	1	1	0.0	1	1	2009	6	13	21	0.0	1	1	2009	9	19	21	0.0	1	1
2009	2	1	9	1.0	1	1	2009	6	14	9	1.0	1	1	2009	9	20	9	1.0	1	1
2009	2	6	21	0.0	1	1	2009	6	19	21	0.0	1	1	2009	9	25	21	0.0	1	1
2009	2	7	9	1.0	1	1	2009	6	20	9	1.0	1	1	2009	9	26	9	1.0	1	1
2009	2	7	21	0.0	1	1	2009	6	20	21	0.0	1	1	2009	9	26	21	0.0	1	1
2009	2	8	9	1.0	1	1	2009	6	21	9	1.0	1	1	2009	9	27	9	1.0	1	1
2009	2	13	21	0.0	1	1	2009	6	26	21	0.0	1	1	2009	10	1	1	1.0	1	1
2009	2	14	9	1.0	1	1	2009	6	27	9	1.0	1	1	2009	10	2	21	0.0	1	1
2009	2	14	21	0.0	1	1	2009	6	27	21	0.0	1	1	2009	10	3	9	1.0	1	1
2009	2	15	9	1.0	1	1	2009	6	28	9	1.0	1	1	2009	10	3	21	0.0	1	1
2009	2	20	21	0.0	1	1	2009	6	28	21	0.0	1	1	2009	10	4	9	1.0	1	1
2009	2	21	9	1.0	1	1	2009	7	1	1	1.0	1	1	2009	10	4	21	0.0	1	1
2009	2	21	21	0.0	1	1	2009	7	3	21	0.0	1	1	2009	10	9	21	0.0	1	1
2009	2	22	9	1.0	1	1	2009	7	4	9	1.0	1	1	2009	10	10	9	1.0	1	1
2009	2	22	21	0.0	1	1	2009	7	4	21	0.0	1	1	2009	10	10	21	0.0	1	1
2009	2	27	9	1.0	1	1	2009	7	5	9	1.0	1	1	2009	10	11	9	1.0	1	1
2009	2	28	21	0.0	1	1	2009	7	10	21	0.0	1	1	2009	10	17	1	0.0	1	1
2009	2	28	21	0.0	1	1	2009	7	11	9	1.0	1	1	2009	10	17	1	0.0	1	1
2009	3	1	1	0.0	1	1	2009	7	11	21	0.0	1	1	2009	10	23	21	0.0	1	1
2009	3	1	9	1.0	1	1	2009	7	12	9	1.0	1	1	2009	10	26	1	1.0	1	1
2009	3	6	21	0.0	1	1	2009	7	12	21	0.0	1	1	2009	10	30	21	0.0	1	1
2009	3	7	9	1.0	1	1	2009	7	17	21	0.0	1	1	2009	10	31	9	1.0	1	1
2009	3	7	21	0.0	1	1	2009	7	18	9	1.0	1	1	2009	10	31	9	1.0	1	1
2009	3	8	9	1.0	1	1	2009	7	18	21	0.0	1	1	2009	10	31	21	0.0	1	1
2009	3	13	21	0.0	1	1	2009	7	19	9	1.0	1	1	2009	11	1	1	0.0	1	1
2009	3	14	9	1.0	1	1	2009	7	24	21	0.0	1	1	2009	11	1	9	1.0	1	1
2009	3	14	21	0.0	1	1	2009	7	25	9	1.0	1	1	2009	11	6	21	0.0	1	1
2009	3	15	9	1.0	1	1	2009	7	25	21	0.0	1	1	2009	11	7	9	1.0	1	1
2009	3	20	21	0.0	1	1	2009	7	26	9	1.0	1	1	2009	11	7	21	0.0	1	1
2009	3	21	9	1.0	1	1	2009	7	31	21	0.0	1	1	2009	11	8	9	1.0	1	1
2009	3	21	21	0.0	1	1	2009	8	1	1	0.0	1	1	2009	11	13	21	0.0	1	1
2009	3	22	9	1.0	1	1	2009	8	1	9	1.0	1	1	2009	11	14	9	1.0	1	1
2009	3	22	21	0.0	1	1	2009	8	1	21	0.0	1	1	2009	11	14	21	0.0	1	1
2009	3	27	9	1.0	1	1	2009	8	2	9	1.0	1	1	2009	11	15	9	1.0	1	1
2009	3	28	21	0.0	1	1	2009	8	7	21	0.0	1	1	2009	11	20	21	0.0	1	1
2009	3	28	21	0.0	1	1	2009	8	8	9	1.0	1	1	2009	11	21	9	1.0	1	1
2009	3	29	9	1.0	1	1	2009	8	8	21	0.0	1	1	2009	11	21	21	0.0	1	1
2009	4	1	1	1.0	1	1	2009	8	8	21	0.0	1	1	2009	11	22	9	1.0	1	1
2009	4	3	21	0.0	1	1	2009	8	9	9	1.0	1	1	2009	11	27	21	0.0	1	1
2009	4	4	9	1.0	1	1	2009	8	14	21	0.0	1	1	2009	11	27	21	0.0	1	1
2009	4	5	1	0.0	1	1	2009	8	15	9	1.0	1	1	2009	11	28	9	1.0	1	1

Hourly Capacity Pattern 4 (continued)

Yr	Prd	Start		Hr	Cap		OM
		Day			Multiplier	Multiplier	
2009	11	28	21		0.0	1	1
2009	11	29	9		1.0	1	1
2009	12	1	1		1.0	1	1
2009	12	4	21		0.0	1	1
2009	12	5	9		1.0	1	1
2009	12	5	21		0.0	1	1
2009	12	6	9		1.0	1	1
2009	12	11	21		0.0	1	1
2009	12	12	9		1.0	1	1
2009	12	12	21		0.0	1	1
2009	12	13	9		1.0	1	1
2009	12	18	21		0.0	1	1
2009	12	19	9		1.0	1	1
2009	12	19	21		0.0	1	1
2009	12	20	9		1.0	1	1
2009	12	25	21		0.0	1	1
2009	12	26	9		1.0	1	1
2009	12	26	21		0.0	1	1
2009	12	27	9		1.0	1	1

**Hawaiian Electric Company, Inc.**

**Index of Exhibits & Workpapers for HECO Rate Case - Direct Testimony HECO T-5  
TEST YEAR 2009**

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HECO-WP-502 is confidential and will be provided  
after a Protective Order is issued in this proceeding.

HECO-WP-503 is confidential and will be provided  
after a Protective Order is issued in this proceeding.

**Hawaiian Electric Company, Inc.**

**Normalization of Facilities Base Fee Allocated To Kahe Pipeline**

Year	w.o. #	Pipeline Base Fee Alllocated To Kahe Pipeline	
		total actual work order	Fixed Fee 2007 Dollars
2005	HP002069	\$588,128	\$622,812
2006	HP002263	\$588,647	\$604,287
2007	HP002531	\$591,861	\$591,861
total in 2007 dollars			\$1,818,959
annual average in 2007 dollars			\$606,320
annual average in 2008 dollars			\$618,156
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$630,823</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005 113.0

(Source: BEA, NIPA Table) 2006 116.6

(Source: BEA, NIPA Table) 2007 119.7

Est GDPIPD DOE/EIA STEO May 2008)

2008 122.0

2009 124.5

**Hawaiian Electric Company, Inc.**

**Normalization of Facilities Base Fee Allocated To Waiau Pipeline**

<b>Year</b>	<b>w.o. #</b>	<b>Pipeline Base Fee Alllocated To Waiau Pipeline</b>	
		<b>total actual work order</b>	<b>Fixed Fee 2007 Dollars</b>
2005	HP002070	\$1,463,916	\$1,550,248
2006	HP002264	\$1,465,210	\$1,504,138
2007	HP002530	\$1,473,210	\$1,473,210
total in 2007 dollars			\$4,527,596
annual average in 2007 dollars			\$1,509,199
annual average in 2008 dollars			\$1,538,661
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$1,570,191</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005 113.0

(Source: BEA, NIPA Table) 2006 116.6

(Source: BEA, NIPA Table) 2007 119.7

Est GDPIPD DOE/EIA STEO May 2008)

2008 122.0

2009 124.5

**Hawaiian Electric Company, Inc.**  
**Pipeline Maintenance Expense**  
**Normalization of Kahe Pipeline Non-Base/Variable O&M Expense**

<b>Year</b>	<b>w.o. #</b>	<b>Kahe Pipeline Non-Base/Variable O&amp;M Expense</b>	
		<b>total actual work order</b>	<b>total in 2007 dollars</b>
2005	G0011242	\$290,013	\$307,116
2006	G0011251	\$138,651	\$142,335
2007	G0014143	\$811,696	\$811,696
total in 2007 dollars			\$1,261,147
annual average in 2007 dollars			\$420,382
annual average in 2008 dollars			\$428,588
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$437,371</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005 113.0

(Source: BEA, NIPA Table) 2006 116.6

(Source: BEA, NIPA Table) 2007 119.7

Est GDPIPD DOE/EIA STEO May 2008)

2008 122.0

2009 124.5

**Hawaiian Electric Company, Inc.**  
**Pipeline Maintenance Expense**  
**Normalization of Waiau Pipeline Non-Base/Variable O&M Expense**

<b>Year</b>	<b>w.o. #</b>	<b>Waiau Pipeline Non-Base/Variable O&amp;M Expense</b>	
		<b>total actual work order</b>	<b>total in 2007 dollars</b>
2005	G0011243	\$125,965	\$133,393
2006	G0011252	\$40,699	\$41,780
2007	G0014142	\$58,330	\$58,330
total in 2007 dollars			\$233,504
annual average in 2007 dollars			\$77,835
annual average in 2008 dollars			\$79,354
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$80,980</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005 113

(Source: BEA, NIPA Table) 2006 117

(Source: BEA, NIPA Table) 2007 120

Est GDPIPD DOE/EIA STEO May 2008)

2008 122

2009 125

**Hawaiian Electric Company, Inc.**  
**Tank Farm Management Fee**  
**Normalization of BPTF Base Fee Expense**

<b>year</b>	<b>w.o. #</b>	<b>Tankfield/BPTF Base Fee</b>	
		<b>total actual work order</b>	<b>total in 2007 dollars</b>
2005	HP2072	\$304,787	\$322,761
2006	HP2265	\$304,807	\$312,905
2007	HP2533	\$320,461	\$320,461
total in 2007 dollars			\$956,127
annual average in 2007 dollars			\$318,709
annual average in 2008 dollars			\$324,931
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$331,589</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005 113.0

(Source: BEA, NIPA Table) 2006 116.6

(Source: BEA, NIPA Table) 2007 119.7

Est GDPIPD DOE/EIA STEO May 2008)

2008 122.0

2009 124.5

**Hawaiian Electric Company, Inc.**  
**Tank Farm Management Fee**  
**Normalization of BPTF Low Pressure Steam Expense**

year	w.o. #	BPTF Low Pressure Steam	
		total actual work order	total in 2007 dollars
2005	HP002071	\$635,369	\$672,839
2006	HP002268	\$710,625	\$729,505
2007	HP002532	\$391,060	\$391,060
total in 2007 dollars			\$1,793,405
annual average in 2007 dollars			\$597,802
annual average in 2008 dollars			\$609,472
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$621,961</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005 113.0

(Source: BEA, NIPA Table) 2006 116.6

(Source: BEA, NIPA Table) 2007 119.7

Est GDPIPD DOE/EIA STEO May 2008

2008 122.0

2009 124.5



**Hawaiian Electric Company, Inc.**  
**Tank Farm Management Fee**  
**Normalization of Non-Tank BPTF Non-Base/Variable O&M**

<b>Year</b>	<b>w.o. #</b>	<b>BPTF Reimbursable/variable O&amp;M</b>	
		<b>total actual work order</b>	<b>total in 2007 dollars</b>
2005	G0011244	\$363,016	\$384,424
2006	G0011253	\$550,595	\$565,223
2007	G0014134	\$1,029,137	\$1,029,137
total in 2007 dollars			\$1,978,784
annual average in 2007 dollars			\$659,595
annual average in 2008 dollars			\$672,471
<b>3-year normalized annual amount in 2009 dollars</b>			<b>\$686,251</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 1995 92.1

(Source: BEA, NIPA Table) 1996 93.9

(Source: BEA, NIPA Table) 1997 95.4

(Source: BEA, NIPA Table) 2005 113.0

(Source: BEA, NIPA Table) 2006 116.6

(Source: BEA, NIPA Table) 2007 119.7

Est GDPIPD DOE/EIA STEO May 2008)

2008 122.0

2009 124.5

**Hawaiian Electric Company, Inc.**  
**Tank Farm Management Fee**  
**Normalization of Tank # 131, # 132, # 133 Major Maintenance/O&M**

**Reimbursable/variable O&M - Tank Maintenance**

Tank 131 cleaning, bottom inspection, re-coating, shell repairs, re-insulation O&M occurring presently  
Tank 131 bottom replacement is capital work. Tank 132/Tank 133 similar repairs likely.

Previous repairs: # 131 in 1995, # 132 in 1996, and Tk133 in 1007

Tank maintenance outage cycle: # 131 in 2007, # 133 in 2009; #132 in 2010

Assumption that bottom replacement will lengthen maintenance cycle to 20 years

Normalize on 20 year re-inspection cycle (double bottom)

	total project cost	total in 2007 dollars
Tank 131 O&M (outage in 2007)	\$866,348	\$866,348
Tank 131 20-year cycle annual avg in 2007 dollars		\$43,317
Tank 131 20-year cycle annual avg in 2008 dollars		\$44,163
<b>20-year normalized annual amount for # 131 in 2009 dollars</b>		<b>\$45,068</b>

	total project cost	total in 2007 dollars
Tank 132 (last inspection 1996)	\$530,739	\$676,707
Tank 133 (last inspection 1997)	\$447,441	\$561,161
Total in 2007 dollars		\$1,237,868

Tank 132/133 13-year cycle annual avg in 2007 dollars	\$95,221
Tank 132/133 13-year cycle annual avg in 2008 dollars	\$97,080
<b>13-year normalized annual amount for # 132+#133 in 2009 dollars</b>	<b>\$99,069</b>

Notes:

Price-Year Conversions:

GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 1995	92.1
(Source: BEA, NIPA Table) 1996	93.9
(Source: BEA, NIPA Table) 1997	95.4
(Source: BEA, NIPA Table) 2007	119.7

Est GDPIPD DOE/EIA STEO May 2008)

2008	122.0
2009	124.5

**Hawaiian Electric Company, Inc.**

**DERIVATION OF HECO (INTERNAL) FUEL HANDLING EXPENSES**

**Non-Facilities Fuel Handling Expenses:**

Share info sys non-labor for fuel data system:	\$	42,600
Fuels Resources Div. labor, non-labor and overheads:	\$	954,095
Fuels Infrastructure Div., non-labor and overheads	\$	257,564
Power Supply Services Dept. overheads	\$	9,700
Share O&M Department labor and overheads:	\$	429,655
<b>TOTAL</b>	<b>\$</b>	<b>1,693,614</b>

	<u><b>Kahe</b></u>	<u><b>Waiau</b></u>	<u><b>Other</b></u>	<u><b>Total</b></u>
<sup>1</sup> <b>Facilities Base Fee:</b>				
Base Fee before prorata handling	\$ 630,823	\$ 1,570,191		\$ 2,201,014
<sup>2</sup> <b>Facilities Non-Base Maintenance:</b>				
Non-Base maintenance before prorata handling	\$ 437,371	\$ 80,980		\$ 518,351
<sup>3</sup> <b>Tank Farm Services:</b>				
Management Fee, Steam, Non-Base maintenance, Tank maintenance before prorata handling			\$ 1,783,938	\$ 1,783,938
<b>TOTAL FUEL FACILITIES O&amp;M BEFORE PRORATA HANDLING APPLIED</b>				<b>\$ 4,503,303</b>

<sup>1</sup> See HECO-WP-504, HECO-WP-505

<sup>2</sup> See HECO-WP-506, HECO-WP-507

<sup>3</sup> See HECO-WP-508, HECO-WP-509, HECO-WP-510

Allocation by Activity Expense Amount:		
<b>% total expense before allocation; dollar amount</b>		
Kahe Base Fee	14.01%	237,241.57
Waiau Base Fee	34.87%	590,521.55
Kahe Maintenance	9.71%	164,487.63
Waiau Maintenance	1.80%	30,455.17
BPTF Services	39.61%	670,908.08
<b>total fuel handling by allocation</b>		<b>1,693,614.00</b>

	<u><b>Kahe</b></u>	<u><b>Waiau</b></u>	<u><b>Other</b></u>	<u><b>Total</b></u>
<b>Facilities Base Fee:</b>				
Base Fee after prorata handling	\$ 868,065	\$ 2,160,713		\$ 3,028,777
<b>Facilities Non-Base Maintenance:</b>				
Non-Base maintenance after prorata handling	\$ 601,859	\$ 111,435		\$ 713,294
<b>Tank Farm Services:</b>				
Management Fee, Steam, Non-Base maintenance, Tank maintenance after prorata handling			\$ 2,454,846	\$ 2,454,846
<b>TOTAL FUEL HANDLING EXPENSE AFTER PRORATA EXPENSE APPLICATION</b>				<b>\$ 6,196,917</b>

**Hawaiian Electric Company, Inc.**

**DERIVATION OF CALCIUM NITRATE FUEL ADDITIVE  
EXPENSE FOR KAHE UNIT 6**

Based on Kahe 6 estimated annual generation of 655,791 MWH,  
and the estimated annual fuel usage at Kahe 6 of 6,834,002 MBTU.

The annual fuel usage in gallons is calculated to be:

$$\begin{aligned} &6,834,002 \text{ MBTU} \div 6.2 \text{ MBTU per bbl} \times 42 \text{ gallons per bbl} \\ &= 46,294,852 \text{ gallons of Fuel Oil} \end{aligned}$$

Fuel additive usage is 1 gallon of additive per 4000 gallons of Fuel Oil

**Estimated annual fuel additive usage:**

$$46,294,852 \div 4000 = \underline{\mathbf{11,574 \text{ gallons fuel additive per year}}}$$

Estimated annual cost of the fuel additive.

The calculation of the estimated annual fuel additive cost is shown below:

a) cost of the additive is \$5.51 per gallon

$$\$5.51 \times 11,574 = \$63,773$$

b) tax = \$63,773 x 4.5% = \$2,870

c) materials on-cost is 10.53%

$$(\$63,773 + \$2,870) \times 10.53\% = \$7,018$$

d) shipping cost to Hawaii \$17,142 per 26 totes order, plus  
trucking to inventory \$1,162 per 26 totes (7,150 gallon) order;  
plus 4.5% tax = \$2.675 per gallon

$$11,574 \text{ gallons} \times \$2.675 = \$30,960$$

**The total estimated annual cost of the fuel additive is:**

$$\$63,773 + \$2,870 + \$7,018 + \$30,960 = \underline{\mathbf{\$104,621}}$$

per gallon: **\$9.039**

Kalaeloa 2009 Rate Case Forecasted Expenses

5/21/2008 Production Simulation

Assumptions:		4Q 2003 Base Additive GNPIP	107.18
Forced Outage Rate	1.50%	4Q 2008 Current Additive GNPIP	122.894
Base GNPIP	73.944	Additive transition multiplier	1.019702277
4Q 2008 GNPIP	122.884	Variable O&M credit applied to	May
Base LSFO Fuel Price	\$19.5000		
2009 LSFO Fuel Price	\$102.5670		

One CT			Two CTs			EAF Calculation		TOTAL FACILITY								
net MWh	Op Hrs	Avg MW	net MWh	Op Hrs	Avg MW	Monthly EAF	YTD EAF	Energy MWh	Fuel Only No additive	Additive Only	Total Fuel	O&M (Non-fuel) Independent of Minimum Purch	Credit	Capacity Up to 180 MW	Capacity Over 180 MW	Total Expense
Jan	9,840	109	90,000	122,487	624	98.50%	98.50%	132,327	\$19,508,200	\$222,793	\$19,730,993	\$2,111,288		\$2,465,250	\$261,333	\$24,568,864
Feb	8,510	95	90,000	113,112	567	98.50%	98.50%	121,622	\$17,917,633	\$204,769	\$18,122,403	\$1,940,489		\$2,465,250	\$261,333	\$22,789,475
Mar	9,308	103	90,000	121,654	629	98.50%	98.50%	130,962	\$19,296,974	\$220,495	\$19,517,468	\$2,089,509		\$2,465,250	\$261,333	\$24,333,561
Apr	40,513	450	90,000	15,755	82	44.60%	85.02%	56,268	\$9,138,697	\$94,736	\$9,233,433	\$897,760		\$2,465,250	\$261,333	\$12,857,777
May	27,659	307	90,000	81,218	402	80.49%	84.08%	108,877	\$16,505,277	\$183,311	\$16,688,588	\$1,737,141	(\$1,543,931)	\$2,465,250	\$261,333	\$19,608,382
Jun	8,510	95	90,000	123,339	615	98.50%	98.50%	131,849	\$19,407,684	\$221,988	\$19,629,672	\$2,103,661		\$2,465,250	\$261,333	\$24,459,917
Jul	8,776	98	90,000	127,638	635	98.50%	98.50%	136,414	\$20,078,969	\$229,674	\$20,308,643	\$2,176,496		\$2,465,250	\$261,333	\$25,211,722
Aug	10,372	115	90,000	125,800	618	98.50%	98.50%	132,172	\$20,080,757	\$229,267	\$20,310,023	\$2,172,635		\$2,465,250	\$261,333	\$25,209,242
Sep	8,510	95	90,000	123,557	615	98.50%	98.50%	132,067	\$19,439,446	\$222,355	\$19,661,801	\$2,107,139		\$2,465,250	\$261,333	\$24,495,524
Oct	12,500	139	90,000	115,896	573	92.15%	90.70%	128,396	\$16,997,207	\$216,174	\$19,213,381	\$2,048,568		\$2,465,250	\$261,333	\$23,988,533
Nov	9,308	103	90,000	122,402	606	98.50%	91.40%	131,710	\$19,405,955	\$221,754	\$19,627,709	\$2,101,444		\$2,465,250	\$261,333	\$24,455,736
Dec	8,510	95	90,000	125,086	638	98.50%	92.00%	133,596	\$19,682,218	\$224,929	\$19,887,147	\$2,131,535		\$2,465,250	\$261,333	\$24,745,266

Total 162,318 1,804 90,000 1,317,942 6,603 199,584

DATA SOURCES AND NOTES:

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A," if the data are from the SUMMARY sheet and preceded by a "B," if the data are from the BACKUP sheet.

- Forced Outage Rate in cell E(8) is based on the approximate actual performance and forecasted performance.
- Base GNPIP in cell E(9) is from the GNPIP value on 1/1/88 per the Kalaeloa PPA, p50. This value is the 4th quarter 1987 GNPIP as updated per Bureau of Economic Analysis publication as of March 27, 2008.
- Value is consistent with the June 30, 2003 letter agreement with KPLP. 4Q 2008 GNPIP in cell E(10) is based on the GDP Chain-type Price Index escalation per Energy Information Administration / AEO 2008 (Table A19, Macroeconomic Indicators) from the Internet. (http://www.eia.doe.gov/coal/aep/pdf/appa.pdf; visited site on 3/10/2008).
- Base LSFO Fuel Price in cell E(11) is from A. Goto 5/23/2008 e-mail.
- Capacity Cost per kW-mo. up to 180 MW, in cell J(9) is from the Kalaeloa PPA Amendment 2, p5.
- Capacity Cost per kW-mo. over 180 MW, in cell J(9) is from the Kalaeloa PPA Amendment No.6.
- Capacity Cost per kW-mo. over 180 MW, in cell J(9) is from the Kalaeloa PPA Amendment 2, p2.
- O&M Base per kWh, above the minimum purchase amount, for loads < 180 MW, in cell J(12) is from proposed Kalaeloa PPA amendment No.5, p10.
- O&M Base per kWh, above the minimum purchase amount, for loads >= 180 MW, in cell J(13) is from Kalaeloa PPA amendment No.5, p 10.

- 4Q Base Additive GNPIP in cell R(8) is the value on 1/1/2004 per the Kalaeloa PPA Amendment 5, page 4. This value is the 4th quarter 2003 GNPIP as updated per Bureau of Economic Analysis publication as of March 27, 2008.
- The additive transition multiplier in cell R(10) is from the Kalaeloa PPA Amendment 5, p 7
- 4Q 2008 Current Additive GNPIP in cell R(9) per Kalaeloa PPA amendment 5, pg 4 is the same values as in Note 3.
- Base Fuel Additive per kWh in cell N(10) is based on Kalaeloa PPA, p50.
- Shortfall Energy Cost per kWh in cell N(11) is based on Kalaeloa PPA, p51.
- The net MW and Op Hours in cols C and D, respectively, and cols F and G, respectively, are from the HECO 2009 Rate Case Production Simulation dtd 5/21/08.
- The Avg MW in col E is calculated from C / D. The Avg MW in col H is calculated from F / G.
- The monthly EAF in col J is calculated as follows: (B.C \* 24) - B.D - B.E) / (B.C \* 24).
- The YTD EAF in col J is calculated as follows: (sum B.C existing and previous months) \* 24 + (I \* B.C \* 24) / J (from previous month) \* (sum B.C existing and previous months) \* 24).
- The Energy MW in col K is calculated from C + F.
- The Fuel Only No Additive cost in col L is calculated from B.H + B.M.
- The Additive Only cost in col M is calculated from B.I + B.N.
- The Total Fuel cost in col N is calculated from L + M.
- The O&M (Non-fuel) cost in col O is calculated from J(10) \* 1000 \* K \* (E(10) / E(9)), where column K values are the monthly MWH. Value is shown regardless of status relative to the minimum purchase level.
- The variable O&M credit is Col P calculated from E(10) / E(9 \* 1000) \* (B.T(62) \* J(12)) - (B.S(62) \* J(13)).
- The credit is input as a negative sign relative to expenses elsewhere on this spreadsheet. It appears only in the month of May, to reflect reconciliation at the end of the Contract Year.
- Col Q is empty.
- The Capacity cost, up to 180 MW, in col R is calculated from J(8) \* 180,000.
- The Capacity cost, over 180 MW, in col S is calculated from J(9) \* 28,000.
- The Total Expense cost in col T is the sum of columns N + O + P + R + S. Col Q is empty.
- The Total Shortfall Cost in col T(39) is from BN(48).

Total Shortfall Cost	\$0	\$29,583,000	\$3,136,000	\$276,723,997
Total Expense	\$0	\$276,723,997		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
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Kalaeloa 2009 Rate Case Forecasted Expenses  
5/21/2008 Production Simulation

Assumptions: See SUMMARY sheet

AVAILABILITY DATA					ONE CT ENERGY				TWO CT ENERGY			
Calendar Days	Planned Maintenance EHrs Out	Forced Outage EHrs Out	Base Fuel Comp. cents/kWh	Total Energy cents/kWh	Fuel Only No additive	Additive Only	Total Fuel	Base Fuel Comp. cents/kWh	Total Energy cents/kWh	Fuel Only No additive	Additive Only	Total Fuel
31	0.00	11.16	3,211,394	17,059,803	\$1,662,143	\$16,567	\$1,678,710	2,770,000	14,738,139	\$17,846,057	\$206,225	\$18,052,282
Jan			3,211,394	17,059,803	\$1,437,529	\$14,329	\$1,451,857	2,770,000	14,738,139	\$16,480,104	\$190,441	\$16,670,545
Feb			3,211,394	17,059,803	\$1,572,287	\$15,672	\$1,587,969	2,770,000	14,738,139	\$17,724,676	\$204,823	\$17,929,499
Mar			3,211,394	17,059,803	\$6,843,237	\$68,210	\$6,911,447	2,770,000	14,738,139	\$26,285,461	\$2,321,986	\$28,607,447
Apr	31	394.00	3,211,394	17,059,803	\$4,671,969	\$46,568	\$4,718,537	2,770,000	14,738,139	\$11,833,308	\$136,743	\$11,970,051
May	30	0.00	3,211,394	17,059,803	\$1,437,529	\$14,329	\$1,451,857	2,770,000	14,738,139	\$17,970,155	\$207,660	\$18,177,815
Jun	30	0.00	3,211,394	17,059,803	\$1,482,452	\$14,776	\$1,497,228	2,770,000	14,738,139	\$18,596,517	\$214,898	\$18,811,415
Jul	31	0.00	3,211,394	17,059,803	\$1,751,988	\$17,463	\$1,769,451	2,770,000	14,738,139	\$18,328,768	\$211,804	\$18,540,572
Aug	31	0.00	3,211,394	17,059,803	\$2,437,529	\$24,329	\$2,461,857	2,770,000	14,738,139	\$18,001,917	\$208,027	\$18,209,944
Sep	30	0.00	3,211,394	17,059,803	\$2,111,371	\$21,045	\$2,132,416	2,770,000	14,738,139	\$16,885,836	\$195,129	\$17,080,965
Oct	31	48.00	3,211,394	17,059,803	\$1,572,297	\$15,672	\$1,587,969	2,770,000	14,738,139	\$17,833,658	\$206,082	\$18,039,740
Nov	30	0.00	3,211,394	17,059,803	\$1,437,529	\$14,329	\$1,451,857	2,770,000	14,738,139	\$18,224,689	\$210,601	\$18,435,290
Dec	31	0.00										

Total 365 578 122.73 \$27,417,869 \$273,288 \$27,691,157 \$192,021,147 \$2,218,958 \$194,240,105

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A." if the data are from the SUMMARY sheet and preceded by a "B." if the data are from the BACKUP sheet.

Planned Maintenance Equivalent Hours (EHrs) Out in col D is based in part on a template provided by the HECO 2009 Normalized Planned Maintenance Schedule dated 3/24/08. This template and the assumed EAF of 92.0% and EFOR of 1.5% are used to estimate the corresponding number of equivalent full plant hours outage for the respective months. The result is maintenance outage equivalent full plant hours of 394 in April, 136 in May, and 48 in October.

Data are entered as equivalent full plant hours based on a 189 MW full plant as used in invoice calculations.

ABOVE MINIMUM PURCHASE				
	143,554 MWH	May 2009		
	108,877 MWH	Part of April 2009		
	34,677 MWH			
	Energy (MWH-Energy (MWH) at < 180 MWH at >= 180 MWH		Total	
May	37,261	71,501	108,762	-
May subtotal	37,261	71,501	108,762	-
April 8-30	32,832	0	32,832	-
April 7 (partial day)	1,890	0	1,890	-
April subtotal	34,722	0	34,722	-
March			-	-
March subtotal	0	0	-	-
Above minimum purchase starts in the hour after the minimum purchase is exceeded such that the total may not exactly match shortfall calculation.				
Total	71,983	71,501	143,484	

Contract Year	Start	End	EAF	EFOR
1	May-91	May-92	83.81%	1.90% Note agreement not reached with KPLP on EFOR; settlement 12/95
2	Jun-92	May-93	86.10%	12.75% Note agreement not reached with KPLP on EFOR; settlement 12/95
3	Jun-93	May-94	80.13%	6.61% Note agreement not reached with KPLP on EFOR; settlement 12/95
4	Jun-94	May-95	93.97%	0.82%
5	Jun-95	May-96	94.01%	1.51%
6	Jun-96	May-97	91.57%	0.87%
7	Jun-97	May-98	93.61%	0.88%
8	Jun-98	May-99	93.65%	0.69%
9	Jun-99	May-00	92.18%	0.56% 20 day full plant turbine outage
10	Jun-00	May-01	95.02%	0.44%
11	Jun-01	May-02	94.29%	0.89%
12	Jun-02	May-03	92.22%	1.10%
13	Jun-03	May-04	93.63%	1.60% (no FM....still pending)--with FM (94.44% and 0.78%)
14	Jun-04	May-05	91.85%	1.04%
15	Jun-05	May-06	92.46%	1.47%
16	Jun-06	May-07	89.84%	Increased outage time to repair HRSG leaks and longer than normal
17	Jun-07	May-08	92.09%	1.40% scheduled outage period to replace tube bundles in HRSG for first time. 0.84%

		GDP Chain-Type Price Index* (2000=1.000)	Change Factor based on GDP Chain-Type Price Index**	GNIPD (2000=100) based on Change Factor
2006	1	1.166		
	2		1.00486	
	3		1.00486	
	4		1.00486	
2007	1		1.00486	
	2		1.00486	
	3		1.00486	
	4		1.00486	120.535 (120.535 is actual***)
2008	1		1.00486	121.121
	2		1.00486	121.709
	3		1.00486	122.300
	4		1.00486	122.894
2009	1		1.00486	123.491
	2		1.00486	124.091
	3		1.00486	124.694
	4		1.00486	125.299
2010	1	1.260	1.00486	125.908
	2		1.00438	126.459
	3		1.00438	127.013
	4		1.00438	127.569
2011	1		1.00438	128.127
	2		1.00438	128.688
	3		1.00438	129.251
	4		1.00438	129.817
2012	1		1.00438	130.385
	2		1.00438	130.955
	3		1.00438	131.528
	4		1.00438	132.104
2013	1		1.00438	132.682
	2		1.00438	133.263
	3		1.00438	133.846
	4		1.00438	134.432
2014	1		1.00438	135.020
	2		1.00438	135.611
	3		1.00438	136.205
	4		1.00438	136.801
2015	1	1.375	1.00438	137.400

\* GDP Chain-Type Price Index per Energy Information Administration / Annual Energy Outlook 2008 (Table A19, Macroeconomic Indicators) from the Internet (<http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf>; visited site on 3/10/2008).

Assumed GDP Chain-Type Price Index is for the first quarter of the year.

\*\* e.g.,  $(1.260/1.166)^{(1/16)} = 1.00486$

\*\*\* Fourth quarter 2007 final GNIPD (2000=100) of 120.535 is from the Bureau of Economic Analysis (3/27/2008).

AES base GNIPD=First Quarter 1987 GNIPD = 72.465 (2000=100), based on 3/27/2008 BEA information.



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Workbook Modified: 12-Aug-06  
Latest Data Input: 19-Jun-08  
Print: 01-Jul-08

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## AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses

### 5/21/2008 Production Simulation

#### Assumptions:

Forced Outage Rate	1.50%	3rd Q 2008 GNPIPD	122.300
Base GNPIPD	72.465	1st Q 2009 GNPIPD	123.491
Capacity-\$/kWh available	\$0.044095	Fixed O&M-\$/kWh available	\$0.011
Variable O&M-\$/kWh purchased	\$0.0005		

ONE BOILER				TWO BOILERS				EAF CALCULATION				TOTAL FACILITY			
net MWh	Op Hrs	Avg MW		net MWh	Op Hrs	Avg MW		Monthly EAF	YTD EAF	Energy MWh	Fuel	Variable O&M	Fixed O&M	Capacity	Total Expense
Jan	0	0	0.000	132.192	734	180.000		98.50%	98.50%	132,192	\$3,770,416	\$111,551	\$2,448,908	\$5,816,624	\$12,147,500
Feb	14,893	165	90.000	89,240	496	179,839		86.19%	92.66%	104,133	\$2,994,385	\$87,873	\$1,935,427	\$4,597,010	\$9,614,695
Mar	8,510	95	90.000	114,740	637	180,142		92.15%	92.48%	123,250	\$3,529,421	\$104,005	\$2,290,914	\$5,441,358	\$11,365,699
Apr	0	0	0.000	128,261	713	179,990		98.50%	93.99%	129,261	\$3,658,286	\$108,234	\$2,369,911	\$5,628,991	\$11,765,422
May	0	0	0.000	131,717	732	179,990		98.50%	94.91%	131,717	\$3,756,859	\$111,150	\$2,448,908	\$5,816,624	\$12,133,542
Jun	0	0	0.000	127,310	707	179,994		98.50%	95.51%	127,310	\$3,631,165	\$107,431	\$2,369,911	\$5,628,991	\$11,737,499
Jul	0	0	0.000	131,976	733	180.000		98.50%	95.94%	131,976	\$3,800,913	\$112,453	\$2,472,757	\$5,816,624	\$12,202,747
Aug	0	0	0.000	132,365	735	179,990		98.50%	96.27%	132,365	\$3,812,107	\$112,785	\$2,472,757	\$5,816,624	\$12,214,273
Sep	0	0	0.000	126,965	705	179,990		98.50%	96.52%	126,965	\$3,656,587	\$108,184	\$2,392,990	\$5,628,991	\$11,786,752
Oct	0	0	0.000	131,847	733	179,996		98.50%	96.72%	131,847	\$3,797,194	\$112,343	\$2,472,757	\$5,816,624	\$12,198,918
Nov	0	0	0.000	128,002	711	180,006		98.50%	96.88%	128,002	\$3,686,467	\$109,067	\$2,392,990	\$5,628,991	\$11,817,516
Dec	0	0	0.000	131,458	730	180,005		98.50%	97.02%	131,458	\$3,786,000	\$112,012	\$2,472,757	\$5,816,624	\$12,187,393
Total	23,404	260	90.000	1,506,072	8,367	179,998		97.02%	97.02%	1,529,476	\$43,879,802	\$1,297,088	\$28,540,987	\$67,454,079	\$141,171,957

#### DATA SOURCES AND NOTES:

- Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A." if the data are from the SUMMARY sheet and preceded by a "B." if the data are from the BACKUP sheet.
- Forced Outage Rate in cell F(9) is based on approximate actual performance.
- Base GNPIPD in cell F(10) is the GNPIPD value for the 1st Quarter of 1987 per the AES-Hawaii PPA, Amendment 1, Exhibit 5, p14. Actual value will be from the same Bureau of Economic Analysis publication as the actual current GNPIPD (numerator in GNPIPD adjustment factor), per the May 3, 2001 letter agreement. For now, a recent 1Q1987 GNPIPD value is used for the Base GNPIPD.
- Capacity cost per available kWh in cell F(11) is based on AES Hawaii PPA, Amendment dated May 8, 2003, p. 2.
- Variable O&M cost per kWh purchased in cell F(12) is based on AES-Hawaii PPA, Amendment 1, p7.
- 3rd Q 2008 GNPIPD in cell K(9) is based on the GDP Chain-Type Price Index escalation per Energy Information Administration / Annual Energy Outlook2008 (Table A19, Macroeconomic Indicators) from the Internet (<http://www.eia.doe.gov/otiaf/aec/pdf/appa.pdf>; visited site on 3/10/2008).

Bonus: \$1,041,933

Total Expense: \$142,213,890

- 1st Q 2009 GNPIPD in cell K(10) is determined in same manner as presented in note above.
- Fixed O&M cost per available kWh in cell K(11) is based on AES-Hawaii PPA, Amendment 1, p7.
- The net MWh and Op Hrs in columns C and D, respectively and columns F and G, respectively are from the HECO 2009 Operational/Budget Production Simulation dtd 5/21/2008.
- The Avg MW in col E is calculated from C / D. The Avg MW in col H is calculated from F / G.
- The Monthly EAF in col I is calculated from ((B.C \* 24) - B.D - B.E) / (B.C \* 24).
- The YTD EAF in col J is calculated as follows. The first month is from I. Subsequent months are calculated from J (from previous month) \* (sum B:C(existing and previous months) \* 24) + (I \* B:C \* 24) / (sum B:C(existing and previous months) \* 24).
- The Energy MWh in col K is calculated from C + F.
- The Fuel cost in col L is calculated from (B.J \* B.G \* F) + (B.H \* B.G \* C) \* 1000 / 100.
- The Variable O&M cost in col M is calculated from F(12) \* 1000 \* B:G \* K.
- The Fixed O&M cost in col N is calculated from K(11) \* 1000 \* B:F \* B:G.
- The Capacity cost in col O is calculated from F(11) \* 1000 \* B:F.
- The Total Expense in col P is calculated by L + M + N + O.
- The Bonus is calculated on the "Bonus" and "Detailed Bonus Calc" sheets.

Page 2 of 3 (BACKUP sheet)

Workbook Modified: 12-Aug-06  
Latest Data Input: 19-Jun-08  
Print: 1-Jul-08

## AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses 5/21/2008 Production Simulation

Assumptions: See SUMMARY sheet

	AVAILABILITY DATA				GNIPD Ratio	ONE BOILER		TWO BOILERS	
	Calendar Days	Planned Maintenance EHrs Out	Forced Outage EHrs Out	MWh Available		Base Fuel Component cents/kWh	Fuel	Base Fuel Component cents/kWh	Fuel
Jan	31	0	11.16	131,911	1.687711	0.000000	\$0	1.689997	\$3,770,416
Feb	28	84	8.82	104,252	1.687711	1.786989	\$449,167	1.689928	\$2,545,217
Mar	31	48	10.44	123,401	1.687711	1.786989	\$256,667	1.690059	\$3,272,754
Apr	30	0	10.80	127,656	1.687711	0.000000	\$0	1.689993	\$3,658,286
May	31	0	11.16	131,911	1.687711	0.000000	\$0	1.689993	\$3,756,859
Jun	30	0	10.80	127,656	1.687711	0.000000	\$0	1.689995	\$3,631,165
Jul	31	0	11.16	131,911	1.704147	0.000000	\$0	1.689997	\$3,800,913
Aug	31	0	11.16	131,911	1.704147	0.000000	\$0	1.689993	\$3,812,107
Sep	30	0	10.80	127,656	1.704147	0.000000	\$0	1.689993	\$3,656,587
Oct	31	0	11.16	131,911	1.704147	0.000000	\$0	1.689995	\$3,797,194
Nov	30	0	10.80	127,656	1.704147	0.000000	\$0	1.690000	\$3,686,467
Dec	31	0	11.16	131,911	1.704147	0.000000	\$0	1.690000	\$3,786,000
Total	365	132	129.42	1,529,744			\$705,834		\$43,173,968

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet and preceded by a "B:" if the data are from the BACKUP sheet.

19. Planned Maintenance Equivalent Hours (EHrs) Out in col D is based on the 2009 planned maintenance [schedule \(normalized\) approved on 3/24/2008, which indicates 11 days of 90 MW outage from 2/22/2009 to 3/4/2009. This results in 84 equivalent full plant hours in February and 48 equivalent full plant hours in March.](#)
20. The Forced Outage Equivalent Hours (EHrs) Out in col E is calculated from A:F(9) \* ((C \* 24) - D).
21. The MWh Available in col F is calculated from 180 \* ((C \* 24) - D - E).
22. The GNIPD ratio in col G is calculated from A:K(9) / A:F(10) for the months January through June and from A:K(10) / A:F(10) for the months of July through December.
23. The Base Fuel Component in cents per kWh in col H is calculated from the formula in the AES-Hawaii PPA, Amendment 1, p7. The load data are from A:E.
24. The Fuel cost in col I is calculated from A:C \* H \* (1000 / 100) \* G.
25. The Base Fuel Component in cents per kWh in col J is calculated from the formula in the AES-Hawaii PPA, Amendment 1, p7. The load data are from A:H.
26. The Fuel cost in col K is calculated from A:F \* J \* (1000 / 100) \* G.

page 3 of 3 (BONUS sheet)

Workbook Modified: 12-Aug-06  
Latest Data Input: 19-Jun-08  
Print: 1-Jul-08

# AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses

## 5/21/2008 Production Simulation

### **AES Availability Bonus**

Two Year Running Avg.  
Equivalent Availability Factor (EAF): 96.24%

Per PPA Section 5.2: Availability bonus = \$15,000 (1987\$) per one tenth of a percentage point over 91%, adjusted in accordance with Section 8.1C

Per PPA Section 8.1C: All dollar values noted in Sections 5.2 and 8.1 will be adjusted each Contract Year in accordance with the following formula:

Bonus Corrected =  $((C + U) / (C + E)) \times \text{GNIPD Ratio} \times \text{Liquidated Damage or Bonus (Uncorrected)}$

C = Capacity Charge  
E = Escalated Energy Charge  
U = Unescalated Energy Charge

GNIPD current (forecasted 1st Q for year of payment)	123.491
GNIPD base	72.465
GNIPD Adjustment Factor	1.7041
C	4.4095 cents/kWh
U (Fuel equation with 180 MW * EAF as input for plant load + Variable O&M component (0.05 cents/kWh) + Fixed O&M component (1.1 cents/kWh))	2.84 cents/kWh
E (U * (GNIPD current/GNIPD base))	4.8359 cents/kWh
$((C+U)/(C+E))$	0.783881187
EAF > 91% (truncated to nearest 0.1%)	5.2%

Bonus uncorrected \$780,000

**Bonus Corrected \$1,041,933**

# AES HAWAII, INC. BONUS EQUIVALENT AVAILABILITY CALCULATION

Assumption of forced outage rate for Contract Year 16 = 1.5 percent.

Month	Potential kWh	Available kWh	Monthly Percentage	Contract Year Cumulative Percentage
<b>Contract Year 16</b>				
Oct-07	133,920,000	82,134,208	61.33%	61.33%
Nov-07	129,600,000	129,578,693	99.98%	80.34%
Dec-07	133,920,000	133,920,000	100.00%	86.96%
Jan-08	133,920,000	133,920,000	100.00%	90.25%
Feb-08	125,280,000	125,279,117	100.00%	92.11%
Mar-08	133,920,000	129,299,252	96.55%	92.86%
Apr-08	129,600,000	124,310,130	95.92%	93.29%
May-08	133,920,000	131,911,200	98.50%	93.95%
Jun-08	129,600,000	127,656,000	98.50%	94.45%
Jul-08	133,920,000	131,911,200	98.50%	94.86%
Aug-08	133,920,000	131,911,200	98.50%	95.20%
Sep-08	129,600,000	127,656,000	98.50%	95.47%
<b>Totals</b>	<b>1,581,120,000</b>	<b>1,509,487,000</b>		<b>95.47%</b>

## Notes

1. Oct-07 to Apr-08 Available kWh are actual values.
2. No maintenance expected for May-08 to Sep-08.

TWO YEAR RUNNING AVERAGE EAF FOR CONTRACT YEARS 15 AND 16	<b>96.28%</b>
PPA EAF BONUS THRESHOLD	91.0%
PPA BONUS EAF FACTOR (Truncated to 0.1%)	5.2%
PPA BONUS IN UNCORRECTED DOLLARS (\$1987)	\$780,000.00
PPA BONUS CORRECTED FORMULA	

Capacity = C	C in cents/kWh =	4.4095
Uncorrected Energy = U	U in cents / kWh = ((fuel equation with 180 MW*EAF as input) + 1.10 + 0.05) =	2.84
Corrected Energy = E	E = U * GNPIPD Adjustment Factor =	4.74
	GNPIPD Current value assumed (on payment date)=	<b>121.121</b>
GNPIPD adjustment factor = Current value / 1987 1st Qtr value	(72.465) =	1.6714
(C + U) / (C + E) =		0.791828244

PPA BONUS PAYMENT CORRECTED	((C + U)/(C + E)) * GNPIPD adjustment factor * Uncorrected Bonus	\$1,032,300.15
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<b>EAF BONUS</b>	<b>CONTRACT YEARS 15 AND 16</b>	<b>Payable November, 2008</b>	<b>\$1,032,300.15</b>
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Assumption of forced outage rate for Contract Year 17 = 1.5 percent.

Month	Potential kWh	Available kWh	Monthly Percentage	Contract Year Cumulative Percentage
<b>Contract Year 17</b>				
Oct-08	133,920,000	131,911,200	98.50%	98.50%
Nov-08	129,600,000	127,656,000	98.50%	98.50%
Dec-08	133,920,000	131,911,200	98.50%	98.50%
Jan-09	133,920,000	131,911,200	98.50%	98.50%
Feb-09	120,960,000	104,252,400	86.19%	96.22%
Mar-09	133,920,000	123,400,800	92.15%	95.52%
Apr-09	129,600,000	127,656,000	98.50%	95.94%
May-09	133,920,000	131,911,200	98.50%	96.27%
Jun-09	129,600,000	127,656,000	98.50%	96.52%
Jul-09	133,920,000	131,911,200	98.50%	96.72%
Aug-09	133,920,000	131,911,200	98.50%	96.88%
Sep-09	129,600,000	127,656,000	98.50%	97.02%
<b>Totals</b>	<b>1,576,800,000</b>	<b>1,529,744,400</b>		<b>97.02%</b>

## Notes

1. The 2009 planned maintenance schedule (normalized) approved on 3/24/2008 indicates 11 days of 90 MW outage from 2/22/2009 to 3/4/2009 (7 days in February and 4 days in March).

TWO YEAR RUNNING AVERAGE EAF FOR CONTRACT YEARS 16 AND 17	<b>96.24%</b>
PPA EAF BONUS THRESHOLD	91.0%
PPA BONUS EAF FACTOR (Truncated to 0.1%)	5.2%
PPA BONUS IN UNCORRECTED DOLLARS (\$1987)	\$780,000.00
PPA BONUS CORRECTED FORMULA	

Capacity = C	C in cents/kWh =	4.4095
Uncorrected Energy = U	U in cents / kWh = ((fuel equation with 180 MW*EAF as input) + 1.10 + 0.05) =	2.84
Corrected Energy = E	E = U * GNPIPD Adjustment Factor =	4.84
	GNPIPD Current value assumed (on payment date)=	<b>123.491</b>
GNPIPD adjustment factor = Current value / 1987 1st Qtr value	(72.465) =	1.7041
(C + U) / (C + E) =		0.783881187

PPA BONUS PAYMENT CORRECTED	((C + U)/(C + E)) * GNPIPD adjustment factor * Uncorrected Bonus	\$1,041,933.31
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<b>EAF BONUS</b>	<b>CONTRACT YEARS 16 AND 17</b>	<b>Payable November, 2009</b>	<b>\$1,041,933.31</b>
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## HPOWER 2009 Operational/Budget Forecasted Expenses 5/21/08 Production Simulation Update

**Assumptions:**

On-Peak, Non-contract Weekday Availability	88.4%
Capacity Charge	\$0.0489 /kWh available weekday on-peak
Capacity	46,000 kW
On Peak Energy Rate-1st 644 MWh/day	\$0.1713 /kWh purch
On Peak Energy Rate-Excess MWh/day	\$0.1713 /kWh purch
Off Peak Energy Rate-1st 250 MWh/day	\$0.1264 /kWh purch
Off Peak Energy Rate-Excess MWh/day	\$0.1264 /kWh purch

	On-Peak MWh	Off-Peak MWh	Total MWh	Total Energy	Capacity	Total Expenses
Jan	17,658.08	12,612.92	30,271	\$4,619,708	\$612,448.64	\$5,232,156
Feb	15,803.67	11,288.33	27,092	\$4,134,555	\$556,771.49	\$4,691,327
Mar	17,710.00	12,650.00	30,360	\$4,633,290	\$612,448.64	\$5,245,739
Apr	17,078.83	12,199.17	29,278	\$4,468,164	\$612,448.64	\$5,080,613
May	6,633.08	4,737.92	11,371	\$1,735,347	\$208,789.31	\$1,944,137
Jun	16,602.25	11,858.75	28,461	\$4,343,481	\$584,610.06	\$4,928,091
Jul	17,613.17	12,580.83	30,194	\$4,607,957	\$620,287.21	\$5,228,244
Aug	17,716.42	12,654.58	30,371	\$4,634,969	\$584,610.06	\$5,219,579
Sep	16,956.33	12,111.67	29,068	\$4,436,116	\$612,448.64	\$5,048,565
Oct	17,767.75	12,691.25	30,459	\$4,648,399	\$612,448.64	\$5,260,847
Nov	16,534.58	11,810.42	28,345	\$4,325,778	\$570,690.78	\$4,896,468
Dec	14,863.33	10,616.67	25,480	\$3,888,545	\$528,932.91	\$4,417,478

**Total** 192,938 137,813 **330,750** **\$50,476,309** **\$6,716,935**

**Total Expense \$57,193,244**

**DATA SOURCES AND NOTES:**

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet, preceded by a "B:" if the data are from the BACKUP sheet and preceded by a "C:" if the data are from the OUTAGE sheet.

- On-Peak is defined as the time period between 7:00 AM and 9:00 PM on Monday through Friday.
- Off-Peak is defined as the time period between 9:00 PM on one day and 7:00 AM the next day.
- On-Peak, Non-contract Weekday Availability in col E(11) is based on HECO projection of HPOWER performance during such periods. Maintenance outages do not count against this availability statistic. Only forced outages during the specific weekday, on-peak period count against this value.
- Capacity Charge in col E(12) is calculated per the HPOWER PPA, Firm Capacity Amendment, pD-6.
- Capacity in col E(13) is specified in HPOWER PPA, Firm Capacity Amendment, pB-8.
- On-Peak and Off-Peak Energy Rates in cols. E(14), E(15), E(16) and E(17) are described in the HPOWER PPA, Firm Capacity Amendment, Appendix D, pgs D-3 to D-5. Energy rates used are the HECO Avoided Energy Cost Rate adjusted for fuel prices effective April 1st 2008 (Docket No. 7310), revised downward by operation of the contract "discount", pgs D-4 to D-5.
- The On-Peak MWh data in col C and the Off-Peak MWh data in col D are from HECO 2009 Operational/Budget Production Simulation dtd 5/21/08.
- The Total MWh in col E is calculated from C + D.
- The Total Energy cost in col F is calculated from B:M + B:R.
- The Capacity cost in col G is calculated from B:H \* E(13) \* E(12).
- The Total Expenses in col H is calculated from F + G.

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Workbook Modified: 30-May-08

Latest Data Input: 30-May-08

Print: 1-Jul-08

Page 2 of 3 (BACKUP sheet)

HPOWER 2009 Operational/Budget Forecasted Expenses

5/21/08 Production Simulation Update

Assumptions: See SUMMARY sheet

AVAILABILITY DATA				ON-PEAK				OFF-PEAK			
Calendar Days	Number of Weekdays	ON-PEAK Weekday Only		Potential First 644 MWh/Day	Forecasted Excess		Energy MWh/Day	Potential First 250 MWh/Day	Forecasted Excess		Energy MWh/Day
		On-Peak Hours	Planned Maintenance Hours		First 644 MWh/Day	Over 644 MWh/Day			First 250 MWh/Day	Over 250 MWh/Day	
Jan	31	308	0	36	272	3,025,183	0	\$0	\$3,025,183	0	\$0
Feb	28	280	0	32	248	\$2,707,484	0	\$0	\$2,707,484	0	\$0
Mar	31	308	0	36	272	\$3,034,077	0	\$0	\$3,034,077	0	\$0
Apr	30	308	0	36	272	\$2,925,946	0	\$0	\$2,925,946	0	\$0
May	31	294	189	12	93	\$1,136,380	0	\$0	\$1,136,380	0	\$0
Jun	30	308	14	34	260	\$2,844,297	0	\$0	\$2,844,297	0	\$0
Jul	31	322	0	37	285	\$3,017,488	0	\$0	\$3,017,488	0	\$0
Aug	31	294	0	34	260	\$3,035,177	0	\$0	\$3,035,177	0	\$0
Sep	30	308	0	36	272	\$2,904,959	0	\$0	\$2,904,959	0	\$0
Oct	31	308	0	36	272	\$3,043,971	0	\$0	\$3,043,971	0	\$0
Nov	30	294	7	33	254	\$2,832,705	0	\$0	\$2,832,705	0	\$0
Dec	31	322	56	31	235	\$2,546,386	0	\$0	\$2,546,386	0	\$0
<b>Total</b>	365	261	3,654	266	393	217,994	2,995	\$0	\$33,054,053	87,040	\$11,003,597
											\$50,773
											\$6,418,659
											\$17,422,256

Contract availability 87.3%

See SUMMARY sheet and below

Sanction payment \$ 20,000

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A;" if the data are from the SUMMARY sheet, preceded by a "B;" if the data are from the BACKUP sheet and preceded by a "C;" if the data are from the OUTAGE sheet.

- The Number of Weekdays in col D is from the 2009 calendar.
- The Number of On-Peak Hours (Hrs) in col E is calculated from D \* 14.
- Planned Maintenance Hours in col F are based on the HECO 2009 Normalized Maintenance schedule approved 3/24/2008. The schedule shows 5/8-5/14/09, 5/30-6/02/09 for 7 weekdays of 23 MW loss, and 5/15-5/29/09 for 11 weekdays of 46 MW loss. Also from 11/29-12/10/09 for 9 weekdays of 23 MW loss.
- Only those hours during weekdays and on-peak are included as calculated from C:K for that month
- The Forced Outage Hours in col G is calculated from (I - A:E(11)) \* E - F.
- The On-Peak Available Hours in col H is calculated from E - F - G.
- The Potential First 644 MWh per Day (46 MW \* 14 hr/day) in col I is calculated from 644 \* C. However, to account for maintenance, months with planned maintenance are calculated as (644-C)-(644\*equivalent full plant maintenance days) where equivalent full plant maintenance days are as calculated in C:K
- The First 644 MWh per Day cost in col J is calculated from A:E(14) \* A:C \* 1000 when A:C is less than I, otherwise, from A:E(14) \* I \* 1000.
- The Excess Over 644 MWh per Day in col K is calculated from A:C - I when A:C is greater than I, otherwise equals zero.
- The Excess Over 644 MWh per Day cost in col L is calculated from A:E(15) \* K \* 1000 when K is greater than zero, otherwise, equals zero.
- The Energy cost in col M is calculated from (A:E(14) \* A:C \* 1000 when K equals zero, otherwise, is calculated from (A:E(15) \* 1000 \* K) + (A:E(14) \* 1000 \* I).
- The Potential First 250 MWh per Day (25 MW \* 10 hr/day) in col N is calc. from 250 \* C. However, to account for maintenance, months with planned maintenance are calculated as (250 MWh per day \* 10hr/day)-(250\*full plant outage days at C:E)-(20\*half plant outage days at C:E) where 20 is the difference between 250MWh and 230MWh(23MWh \*10hr when at half plant outage)
- The First 250 MWh per Day cost in col O is calculated from A:E(16) \* A:D \* 1000 when A:D is less than N, otherwise, is calculated from A:E(16) \* N \* 1000.
- The Excess Over 250 MWh per Day in col P is equal to zero when N is greater than A:D, otherwise, is calculated from A:D - N.
- The Excess Over 250 MWh per Day cost in col Q is calculated from A:E(17) \* P \* 1000 when P is greater than zero, otherwise, equals zero.
- The Energy cost in col R is calculated from A:E(16) \* 1000 \* A:D when P equals zero, otherwise, is calculated from (A:E(17) \* 1000 \* P) + (A:E(16) \* 1000 \* N).
- The Sanction payment in J(32) is payable to HECO at the end of the contract year (July) and is equal to \$10,000 for each full percentage point contract availability is below 90%

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
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Workbook Modified: 30-May-08  
Latest Data Input: 30-May-08  
Print: 1-Jul-08

HPOWER 2009 Operational/Budget Forecasted Expenses  
5/21/08 Production Simulation Update

Planned maintenance from 2009 Normalized Planned Maintenance Schedule

Brk Op	Brk Cl	MW unavail.	calendar days	weekdays	equiv full plant days maintenance	equiv full plant weekdays hrs maintenance
5/8/2009	5/14/2009	23	7	5	3.5	35
5/15/2009	5/29/2009	46	15	11	15	154
5/30/2009	5/31/2009	23	2	0	1	0
6/1/2009	6/2/2009	23	2	2	1	14
11/29/2009	11/30/2009	23	2	1	1	7
12/1/2009	12/10/2009	23	10	8	5	56
Monthly Total equiv. full plant planned maintenance hour						
Jan						
Feb						
March						
April						
May						189
June						14
July						
August						
September						
October						
November						7
December						56

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A;" if the data are from the SUMMARY sheet, preceded by a "B;" if the data are from the BACKUP sheet and preceded by a "C;" if the data are from the OUTAGE sheet.

28. Equiv. full plant days outage in column F is calculated as calendar days E/2 if 23MW unavail in column D else is calculated as E if 46MW unavail in column D.  
29. Weekdays is the count of weekdays of maintenance between dates in column B and C  
30. Equiv. full plant weekdays hours maintenance =(1/2 weekdays F if 23MW unavail in column D or weekdays F if 46MW unavail in column D)\*14 peak hours per weekday.  
31. Monthly total equiv. full plant planned maintenance hours = total equiv. full plant maintenance in column H for each month. (ie. May total is sum H(13-15))

## H-POWER ENERGY RATE CALCULATION

Filed Quarterly Avoided Energy Cost

ADJUSTED FOR APRIL 2008 FUEL PRICES (Docket No. 7310 numbers)

On-Peak	\$0.2044 /kWh	(rounded to 4 decimal places)
Off-Peak	\$0.1499 /kWh	(rounded to 4 decimal places)

Applicable Rate for Quarter

On-Peak		
	<= 644,000 kWh/day	\$0.17132
	Excess	\$0.17132
Off-Peak		
	<= 250,000 kWh/day	\$0.12642
	Excess	\$0.12642

Floor Rates

On-Peak		
	<= 644,000 kWh/day	\$0.0721
	Excess	\$0.0670
Off-Peak		
	<= 250,000 kWh/day	\$0.0560
	Excess	\$0.0519

Discount

On-Peak			Discount
	\$0.0792 to	\$0.0899	0.10
	\$0.0900 to	\$0.1007	0.15
	\$0.1008 to	\$0.1115	0.20
	>=	\$0.1116	0.25
Off-Peak			
	\$0.0610 to	\$0.0689	0.10
	\$0.0690 to	\$0.0769	0.15
	\$0.0770 to	\$0.0849	0.20
	>=	\$0.0850	0.25

H-POWER energy rates 10 1 2004.xls

wds 09052000, rev. dh 04022004

rev. dh 10/1/2004 Discount rounded to 3 decimal places in cents/kWh (5 decimal places in \$/kWh), per 6/21/2004 letter agreement



## H-POWER AVAILABILITY - AVERAGE OF CONTRACT YEARS 1-15

CONTRACT YEAR	PERIOD	ON-PEAK FIRM CAPACITY OBLIGATION	DERATED KILOWATT-HOURS	AVAILABLE KILOWATTHOURS	% YEAR-TO-DATE ON-PEAK AVAILABILITY *
	<b>LIFE</b>	<b>2,217,376,000</b>	<b>371,448,970</b>	<b>1,913,547,030</b>	
1	1992-1993	159,068,000	11,191,603	147,876,397	92.960
2	1993-1994	157,864,000	21,524,451	136,339,549	86.370
3	1994-1995	158,424,000	9,789,344	148,634,656	93.820
4	1995-1996	157,780,000	21,179,832	136,600,168	86.580
5	1996-1997	158,424,000	32,394,353	126,029,647	79.550
6	1997-1998	158,424,000	16,630,120	141,793,880	89.500
7	1998-1999	158,424,000	24,197,953	134,226,047	84.730
8	1999-2000	159,068,000	28,106,208	140,621,792	88.404
9	2000-2001	157,780,000	37,472,981	129,967,019	82.370
10	2001-2002	157,780,000	52,273,145	115,166,855	72.990
11	2002-2003	158,424,000	22,953,911	145,130,089	91.610
12	2003-2004	159,068,000	31,278,356	137,449,644	86.410
13	2004-2005	158,424,000	29,841,122	138,242,878	87.260
14	2005-2006	158,424,000	32,615,591	135,468,409	85.510
15	2006-2007	157,780,000	31,255,521	136,184,479	86.310
Average CY 1-15 =		158,343,733	26,846,966	136,648,767	<b>86.292</b>

CY	% On-Peak Availability
11	91.610
12	86.410
13	87.260
14	85.510
15	86.310
<b>Average: CY 11-15</b>	<b>87.42</b>

\* On-peak, weekday availability, excluding maintenance.

Sanction: \$10,000 per full percentage point below 90% on-peak availability for each contract year.

- NOTES: 1. Power Purchase Contract (PPC) effective March 10, 1986.  
2. Firm Capacity Amendment (FCA) signed June 30, 1992.  
3. FCA valid for twenty-two (22) years; expires July 31, 2015.  
4. Early termination of PPC could occur on Oct. 6, 2008 based on 52 months' notice (June 6, 2004).  
5. Contract period is from July to June, except for Contract Year 1, which is June to June.

## H-POWER AVAILABILITY - AVERAGE OF CONTRACT YEARS 1-9 & 11-15

CONTRACT YEAR	PERIOD	ON-PEAK FIRM CAPACITY OBLIGATION	DERATED KILOWATT-HOURS	AVAILABLE KILOWATTHOURS	% YEAR-TO-DATE ON-PEAK AVAILABILITY *
	<b>LIFE</b>	<b>2,217,376,000</b>	<b>371,448,970</b>	<b>1,913,547,030</b>	
1	1992-1993	159,068,000	11,191,603	147,876,397	92.960
2	1993-1994	157,864,000	21,524,451	136,339,549	86.370
3	1994-1995	158,424,000	9,789,344	148,634,656	93.820
4	1995-1996	157,780,000	21,179,832	136,600,168	86.580
5	1996-1997	158,424,000	32,394,353	126,029,647	79.550
6	1997-1998	158,424,000	16,630,120	141,793,880	89.500
7	1998-1999	158,424,000	24,197,953	134,226,047	84.730
8	1999-2000	159,068,000	28,106,208	140,621,792	88.404
9	2000-2001	157,780,000	37,472,981	129,967,019	82.370
10	2001-2002				
11	2002-2003	158,424,000	22,953,911	145,130,089	91.610
12	2003-2004	159,068,000	31,278,356	137,449,644	86.410
13	2004-2005	158,424,000	29,841,122	138,242,878	87.260
14	2005-2006	158,424,000	32,615,591	135,468,409	85.510
15	2006-2007	157,780,000	31,255,521	136,184,479	86.310
Average: CY 1-15 excluding CY 10 =		158,384,000	25,030,810	138,183,190	<b>87.242</b>

CY	% On-Peak Availability
11	91.610
12	86.410
13	87.260
14	85.510
15	86.310

Average: CY 11-15 = 87.420

\* On-peak, weekday availability, excluding maintenance.

Sanction: \$10,000 per full percentage point below 90% on-peak availability for each contract year.

- NOTES: 1. Power Purchase Contract (PPC) effective March 10, 1986.  
2. Firm Capacity Amendment (FCA) signed June 30, 1992.  
3. FCA valid for twenty-two (22) years; expires July 31, 2015.  
4. Early termination of PPC could occur on Oct. 6, 2008 based on 52 months' notice (June 6, 2004).  
5. Contract period is from July to June, except for Contract Year 1, which is June to June.

H-POWER  
CALCULATION OF ON-PEAK AVAILABILITY

HPAVAIL 15 EXCEL / WF 3/23/98

CONTRACT YEAR: 15 PERIOD: Jul 1, 2006-Jun 30, 2007

MONTH	ON-PEAK FIRM CAPACITY OBLIGATION	DERATED KILOWATTHOURS	AVAILABLE KILOWATTHOURS	% ON-PEAK AVAILABILITY <sup>1</sup>	% YEAR-TO-DATE ON-PEAK AVAILABILITY <sup>1</sup>
Jul 06	13,524,000	4,021,020	9,502,980	70.27 <sup>5</sup>	70.27
Aug 06	14,812,000	7,563,898	7,248,102	48.93 <sup>5</sup>	59.12
Sep 06	13,524,000	783,595	12,740,405	94.21	70.45
Oct 06	14,168,000	848,261	13,319,739	94.01	76.41
Nov 06	14,168,000	1,043,454	13,124,546	92.64	79.69
Dec 06	13,524,000	1,930,939	11,593,061	85.72	80.66
Jan 07	14,812,000	1,536,979	13,275,021	89.62	82.01
Feb 07	12,880,000	3,417,160	9,462,840	73.47 <sup>5</sup>	81.02
Mar 07	14,168,000	5,098,495	9,069,505	64.01 <sup>5</sup>	79.10
Apr 07	13,524,000	1,339,413	12,184,587	90.10	80.17
May 07	14,812,000	1,766,262	13,045,738	88.08	80.93
Jun 07	13,524,000	1,906,045	11,617,955	85.91	81.33
TOTALS:	167,440,000	31,255,521	136,184,479		
49 weeks (less 3-wk maint.):	157,780,000 <sup>3</sup>		136,184,479	<b>86.31</b> <sup>4</sup>	
				2007 Rate Case Availability:	87.00 % <sup>2</sup>

<sup>1</sup> On-peak Availability is weekday, 0800 to 2100 hourly increments, excluding maintenance (hence, month and YTD availability % not accurate)

<sup>2</sup> Rate Case Availability percentage is weekday on-peak, excluding maintenance.

<sup>3</sup> On-peak Firm Capacity Obligation adjusted for maintenance (see Note 5 below) up to three weeks. Maintenance not deducted in actual month.

<sup>4</sup> On-peak Availability Percentage for the Contract Year. The City and HECO are in agreement.

<sup>5</sup> Maintenance occurred in this month but the availability % does not reflect such, as adjustment for maintenance is done at contract year-end:

Major maintenance: Jul 21, 2006 at 0016 hrs to Aug 24, 2006 at 0748 hrs. Minor maintenance: Feb 24, 2007 at 1557 hrs to Mar 18, 2007 at 1020 hrs.

DERIVATION OF CHEVRON, TESORO, AND HOKU SOLAR PURCHASED ENERGY EXPENSES  
(Ref. HECO-607)

Assumptions:

1. 2009 Test Year on- and off-peak avoided energy cost rates for Chevron and Tesoro:  
On-Peak: 20.44 cents/kWh  
Off-Peak: 14.99 cents/kWh
2. 2009 Test Year energy payment rate for Hoku Solar:  
19.0 cents/kWh
3. Purchased kWh:  
Tesoro: 4,056,155 kWh  
Chevron: 712,072 kWh  
Hoku Solar: 305,272 kWh

Purchased expense (rounded to dollars):

Tesoro:

On-peak energy expense =  $4,056,155 * 14/24 * 0.2044 = \$483,629$

Off-peak energy expense =  $4,056,155 * 10/24 * 0.1499 = \$253,341$

Total energy expense = \$736,970

Chevron:

On-peak energy expense =  $712,072 * 14/24 * 0.2044 = \$84,903$

Off-peak energy expense =  $712,072 * 10/24 * 0.1499 = \$44,475$

Total energy expense = \$129,378

Hoku Solar:

Total energy expense =  $305,272 * 0.19 = \$58,002$

Hawaiian Electric Company, Inc.

AVOIDED FUEL COST RATES  
ADJUSTED FOR APRIL 2008 FUEL PRICES

Line	<u>On-Peak Avoided Fuel Cost Rates</u>		
(1)	On-Peak Avoided Cost Rate		19.948 ¢/kwh
(2)	On-Peak Adjustment Factor (Line 17)	<u>1.000</u>	
(3)	Adjusted On-Peak Avoided Cost Rate (Line 1 x Line 2)	<u>19.948 ¢/kwh</u>	
	<u>Off-Peak Avoided Fuel Cost Rates</u>		
(4)	Off-Peak Avoided Cost Rate		14.707 ¢/kwh
(5)	Off-Peak Adjustment Factor (Line 28)	<u>1.000</u>	
(6)	Adjusted Off-Peak Avoided Cost Rate (Line 4 x Line 5)	<u>14.707 ¢/kwh</u>	

ADJUSTMENT FACTORS

On-Peak					
Generating Facility	Fuel Price		Fuel Price Ratio	% of Avoid Gen	Wtd Fuel Price Ratio
	ECA Filing	Prod Sim *			
(7) Honolulu <sup>1</sup>	1652.16	1652.16	1.0000	4.90%	0.0490
(8) Kahe <sup>1</sup>	1602.36	1602.36	1.0000	45.12%	0.4512
(9) Waiau <sup>1</sup>	1602.06	1602.06	1.0000	40.69%	0.4069
(10) Waiau Diesel (W9-10) <sup>1</sup>	2366.04	2366.04	1.0000	2.27%	0.0227
(11) CIP1 Diesel <sup>1</sup>	2402.08	2402.08	1.0000	4.39%	0.0439
(12) CIP1 Biodiesel <sup>1</sup>	4643.68	4643.68	1.0000	0.22%	0.0022
(13) Substation DG <sup>2</sup>	24.993	24.993	1.0000	1.84%	0.0184
(14) AES <sup>2</sup>	2.869	2.869	1.0000	0.00%	0.0000
(15) Kalaeloa <sup>2</sup>	14.992	14.992	1.0000	0.57%	0.0057
(16) H-Power <sup>2,3</sup>	17.132	0.000	NA	0.00%	0.0000
(17) Total				100.00%	1.0000
Off-Peak					
Generating Facility	Fuel Price		Fuel Price Ratio	% of Avoid Gen	Wtd Fuel Price Ratio
	ECA Filing	Prod Sim *			
(18) Honolulu <sup>1</sup>	1652.16	1652.16	1.0000	2.49%	0.0249
(19) Kahe <sup>1</sup>	1602.36	1602.36	1.0000	67.38%	0.6738
(20) Waiau <sup>1</sup>	1602.06	1602.06	1.0000	15.50%	0.1550
(21) Waiau Diesel (W9-10) <sup>1</sup>	2366.04	2366.04	1.0000	0.19%	0.0019
(22) CIP1 Diesel <sup>1</sup>	2402.08	2402.08	1.0000	-0.52%	-0.0052
(23) CIP1 Biodiesel <sup>1</sup>	4643.68	4643.68	1.0000	0.03%	0.0003
(24) Substation DG <sup>2</sup>	24.99	24.99	1.0000	0.25%	0.0025
(25) AES <sup>2</sup>	2.869	2.869	1.0000	0.00%	0.0000
(26) Kalaeloa <sup>2</sup>	14.992	14.992	1.0000	14.68%	0.1468
(27) H-Power <sup>2,3</sup>	12.642	0.000	NA	0.00%	0.0000
(28) Total				100.00%	1.0000

<sup>1</sup> Fuel price in ¢/MBTU

<sup>2</sup> Fuel price in ¢/kwh

<sup>3</sup> TY Prodsim used 0.000 ¢/kwh to represent HPower as a must run unit and therefore HPower's % of avoided generation is zero and the fuel price ratio is not applicable.

\* Fuel price includes Petrospect(inspection) costs in Honolulu, Kahe, Waiau and Waiau Diesel and fuel additive costs in Kahe.

**Hawaiian Electric Company, Inc.**  
**ENERGY COST ADJUSTMENT FILING**

Refer to HECO-1037 HECO Energy Cost Adjustment (ECA) Filing at  
Proposed Rates for details.

HAWAIIAN ELECTRIC COMPANY, INC.  
Summary Statistics for HECO Avoided O&M, Docket No. 7310

<b>OFF-PEAK</b>					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	85.37%	0.028	0.000	0.028	0.024
CT/DG	-0.05%	28.300	-3.000	25.300	-0.013
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	14.68%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.011
<b>ON-PEAK</b>					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	90.71%	0.028	0.000	0.028	0.025
CT/DG	8.72%	1.660	0.000	1.660	0.145
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	0.57%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.170
<b>TOTAL</b>					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	88.49%	0.028	0.000	0.028	0.025
CT/DG	5.06%	1.540	0.014	1.553	0.079
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	6.45%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.104

Hawaiian Electric Company, Inc

AVOIDED WORKING CASH CALCULATIONS

Avoided Working Cash Impact for Fuel and Purchased Energy:	
=	$\frac{\text{purchased energy payment lag days} - \text{fuel oil payment lag days}}{365}$
x	$\frac{(\text{rate of return on rate base}) - (\text{weighted cost of debt} \times \text{composite income tax rate})}{(1 - \text{composite income tax rate})}$
x	avoided fuel cost
OR,	
Avoided Working Cash Impact:	
=	avoided fuel working cash factor x avoided fuel cost

	<u>On-Peak</u>	<u>Off-Peak</u>
(1) fuel oil payment lag days (a1)	17	17
(2) purchased energy payment lag days (b)	44	44
(3) rate of return on rate base (c)	8.620%	8.620%
(4) weighted cost of debt (d)	2.46%	2.46%
(5) composite income tax rate (e)	38.910%	38.910%
(6) avoided fuel working cash factor	0.928%	0.928%
(7) avoided fuel cost (¢/kwh)	19.948	14.707
(8) avoided fuel working cash (¢/kwh)	0.185	0.136



Hawaiian Electric Company, Inc

AVOIDED WORKING CASH CALCULATIONS

Avoided Working Cash Impact for O&M:	
=	$\frac{\text{Purchased energy payment lag days} - \text{O\&M payment lag days}}{365}$
x	$\frac{(\text{rate of return on rate base}) - (\text{weighted cost of debt} \times \text{composite income tax rate})}{(1 - \text{composite income tax rate})}$
x	avoided O&M cost
OR,	
Avoided Working Cash Impact:	
=	avoided O&M working cash factor x avoided O&M cost

	<u>On-Peak</u>	<u>Off-Peak</u>
(1) O&M payment lag days (a2)	34	34
(2) purchased energy payment lag days (b)	44	44
(3) rate of return on rate base (c)	8.620%	8.620%
(4) weighted cost of debt (d)	2.46%	2.46%
(5) composite income tax rate (e)	38.910%	38.910%
(6) avoided O&M working cash factor	0.344%	0.344%
(7) avoided O&M cost (¢/kwh)	0.170	0.011
(8) avoided O&M working cash (¢/kwh)	0.001	0.000
(9) total avoided working cash (¢/kwh)	0.186	0.136

References:

- (a1) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit B, page 2 of 2.
- (a2) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit B, page 2 of 2, O&M Nonlabor payment lag days.
- (b) Represents the weighted average payment lag days based on the specific payment provisions of each purchase power agreement or the payment lag days determined in Docket No. 2006-0386. 44 days represents payment 20 working days following the end of the month.
- (c) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 1 of 3.
- (d) Weighted capital cost on short term debt = 0.15%  
Weighted capital cost on long term debt = 2.31%  
Docket No. 2006-0386, Stipulated Settlement Letter, HECO T-19, Attachment 5, page 1 of 1.
- (e) Composite income tax rate = 38.910%  
Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 3 of 3.

Hawaiian Electric Company, Inc

AVOIDED FUEL INVENTORY CALCULATIONS

Avoided Fuel Inventory Impact:

$$\begin{aligned}
 &= \frac{\text{days of fuel inventory}}{365} \times \text{million btus (mbtus) avoided} \times \$/\text{mbtu} \\
 &\times \frac{(\text{rate of return on rate base}) - (\text{weighted cost of debt} \times \text{composite income tax rate})}{(1 - \text{composite income tax rate})} \\
 &/ \text{as-available QF energy}
 \end{aligned}$$

		<u>On and Off-Peak</u>	
		Industrial Fuel	Diesel Fuel
(1)	days of fuel inventory (a)	35	35
(2)	fuel avoided (MBTU) (b)	78,907	9,050
(3)	fuel price (\$/mbtu) (c)	10.5747	17.1175
(4)	rate of return on rate base (d)	8.620%	8.620%
(5)	weighted cost of debt (e)	2.46%	2.46%
(6)	composite income tax rate (f)	38.910%	38.910%
(7)	as-available QF energy (mwh)	8,760	8,760
(8)	avoided fuel inventory (¢/kwh)	0.115	0.021
(9)	total avoided fuel inventory (¢/kwh)	0.136	

See reference notes on following page.

References:

- (a) Docket No. 2006-0386, CA-IR-214, page 19 & 27 of 139.
- (b) Production Simulation dated 05/21/08
- (c) Docket No. 2006-0386, HECO-408, updated June 2007.  
Residual Fuel Price:  $\$65.5629/\text{bbl} \div 6.2 = \$10.5747/\text{mbtu}$   
Diesel Fuel Price:  $\$100.3084/\text{bbl} \div 5.86 = \$17.1175/\text{mbtu}$
- (d) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 1 of 3.
- (e) Weighted capital cost on short term debt = 0.15%  
Weighted capital cost on long term debt = 2.31%  
Docket No. 2006-0386, Stipulated Settlement Letter, HECO T-19,  
Attachment 5, page 1 of 1.
- (f) Composite income tax rate = 38.910%  
Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 3 of 3.

HECO Avoided O&M Rates

	Consumables		Maintenance		Comments
	Rate	Units	Rate	Units	
Honolulu Station					
Steam Units		¢/kwh			
H8	0.028		0.000		See Note 1
H9	0.028		0.000		See Note 1
Kahe Station					
Steam Units		¢/kwh			
K1	0.028		0.000		See Note 1
K2	0.028		0.000		See Note 1
K3	0.028		0.000		See Note 1
K4	0.028		0.000		See Note 1
K5	0.028		0.000		See Note 1
K6	0.028		0.000		See Note 1
Waiau Station					
Steam Units		¢/kwh			
W3	0.028		0.000		See Note 1
W4	0.028		0.000		See Note 1
W5	0.028		0.000		See Note 1
W6	0.028		0.000		See Note 1
W7	0.028		0.000		See Note 1
W8	0.028		0.000		See Note 1
CT/DG Units				\$/Hr	
W9	0.000		85.639		See Note 1
W10	0.000		85.639		See Note 1
CIP1	3.143		0.000		
Substation DG	0.000		0.000		
IPP		¢/kwh			
AES	0.000		0.000		HECO Purchase Power Contracts (note 2)
KPLP	0.000		0.000		HECO Purchase Power Contracts
H-POWER	0.000		0.000		HECO Purchase Power Contracts

Notes:

1. HECO unit variable O&M rates based on the 3/4/94 stipulation from Docket 7310 escalated to 2009\$ by the Consumer Price Index - Urban for Honolulu & GDPIPD
2. AES variable O&M accounted for in the ABC coefficients

HECO Avoided Off-Peak O&M based on 1 MW Simulation

Off-Peak	MWH				Hours of operation			O&M Rates		Avoided O&M Costs, \$		
	Base	QF in	Diff.	% of Total	Base	QF in	Diff.	Consum. (¢/kwh)	Maint. (\$/Hr)	Consum.	Maint.	Total
<u>Honolulu</u>												
Steam Units												
Honolulu 8	14,924	14,905	19	0.52%	662.2	661.4	0.8	0.028	0.00	5	0	5
Honolulu 9	7,323	7,251	72	1.97%	315.1	312.1	3.0	0.028	0.00	20	0	20
Total	22,247	22,156	91	2.49%	977.3	973.5	3.8			25	0	25
<u>Kahe</u>												
Steam Units												
Kahe 1	116,824	116,639	185	5.07%	2,920.5	2,920.5	0.0	0.028	0.00	52	0	52
Kahe 2	116,799	116,579	220	6.03%	2,921.0	2,921.0	0.0	0.028	0.00	62	0	62
Kahe 3	179,406	178,919	487	13.34%	3,224.0	3,224.0	0.0	0.028	0.00	136	0	136
Kahe 4	172,799	172,384	415	11.37%	3,260.9	3,260.9	0.0	0.028	0.00	116	0	116
Kahe 5	313,837	313,097	740	20.27%	3,280.1	3,280.1	0.0	0.028	0.00	207	0	207
Kahe 6	214,993	214,580	413	11.31%	3,072.2	3,072.2	0.0	0.028	0.00	116	0	116
Total	1,114,658	1,112,198	2,460	67.38%	18,678.7	18,678.7	0.0			689	0	689
<u>Waiau</u>												
Steam Units												
Waiau 3	4,029	3,987	42	1.15%	130.4	129.1	1.3	0.028	0.00	12	0	12
Waiau 4	4,940	4,886	54	1.48%	219.2	216.8	2.4	0.028	0.00	15	0	15
Waiau 5	15,900	15,898	2	0.05%	696.5	696.6	-0.1	0.028	0.00	1	0	1
Waiau 6	9,846	9,814	32	0.88%	430.0	428.8	1.2	0.028	0.00	9	0	9
Waiau 7	124,662	124,547	115	3.15%	3,419.5	3,419.5	0.0	0.028	0.00	32	0	32
Waiau 8	151,212	150,891	321	8.79%	3,202.1	3,202.1	0.0	0.028	0.00	90	0	90
Total	310,589	310,023	566	15.50%	8,097.7	8,092.9	4.8			159	0	159
<u>CT/DG Units</u>												
Waiau 9	119	116	3	0.08%	13.1	12.9	0.2	0.000	85.639	0	17	17
Waiau 10	226	222	4	0.11%	30.0	29.5	0.5	0.000	85.639	0	43	43
CIP1	2,232	2,250	-18	-0.49%	56.5	57.0	-0.5	3.143	0.000	-566	0	-566
Substation DG	265	256	9	0.25%	52.3	50.8	1.5	0.000	0.000	0	0	0
Total	2,842	2,844	-2	-0.05%	151.9	150.2	1.7			-566	60	-506
	313,431	312,867	564	15.45%	8,249.6	8,243.1	6.5			-407	60	-347
<u>IPP</u>												
AES	637,278	637,278	0	0.00%	3,594.6	3,594.6	0.0	0.000	0.00	0	0	0
KPLP	532,314	531,778	536	14.68%	8,102.7	8,102.7	0.0	0.000	0.00	0	0	0
H-POWER	137,813	137,813	0	0.00%	3,097.5	3,097.5	0.0	0.000	0.00	0	0	0
Total	1,307,405	1,306,869	536	14.68%	14,794.8	14,794.8	0.0			0	0	0
TOTAL	2,757,741	2,754,090	3,651	100.00%	42,700.4	42,690.1	10.3			307	60	367

Total Avoided Cost, ¢/kwh0.010

HECO Avoided Off-Peak O&M based on 1 MW Simulation

**SUMMARY STATISTICS**

UNIT TYPE	% Avoided MWH	Rate (¢/kwh)		
		Consum.	Maint.	Net
HECO				
Steam	85.37%	0.028	0.000	0.028
CT/DG	-0.05%	28.300	-3.000	-0.013
AES	0.00%	0.000	0.000	0.000
KPLP	14.68%	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000
TOTAL	100.00%			0.011

Note:

Unit Rates = Total O&M \$/Avoided Unit MWH

Net Rates = Unit Rates \* % Avoided MWH

HECO Avoided On-Peak O&M based on 1 MW Simulation

On-Peak	MWH			Hours of operation			O&M Rates			Avoided O&M Costs, \$		
	Base	QF in	Diff.	% of Total	Base	QF in	Diff.	Consum. (¢/kwh)	Maint. (\$/Hr)	Consum.	Maint.	Total
<u>Honolulu</u>												
Steam Units												
Honolulu 8	73,426	73,409	17	0.33%	15.2	14.8	0.4	0.028	0.000	5	0	5
Honolulu 9	63,994	63,761	233	4.57%	42,700.4	42,690.1	10.3	0.028	0.000	65	0	65
Total	137,420	137,170	250	4.90%	42,715.6	42,704.9	10.7			70	0	70
<u>Kahe</u>												
Steam Units												
Kahe 1	233,485	233,128	357	6.99%	298.8	294.3	4.5	0.028	0.000	100	0	100
Kahe 2	278,011	277,482	529	10.36%	558.7	551.9	6.8	0.028	0.000	148	0	148
Kahe 3	372,125	371,896	229	4.49%	4,088.7	4,088.7	0.0	0.028	0.000	64	0	64
Kahe 4	360,574	360,261	313	6.13%	4,089.4	4,089.4	0.0	0.028	0.000	88	0	88
Kahe 5	604,885	604,724	161	3.15%	4,513.6	4,513.6	0.0	0.028	0.000	45	0	45
Kahe 6	441,446	440,732	714	13.99%	4,565.3	4,565.3	0.0	0.028	0.000	200	0	200
Total	2,290,526	2,288,223	2,303	45.12%	18,114.5	18,103.2	11.3			645	0	645
<u>Waiau</u>												
Steam Units												
Waiau 3	34,829	34,362	467	9.15%	3,090.0	3,092.5	-2.5	0.028	0.000	131	0	131
Waiau 4	44,079	43,767	312	6.11%	2,552.3	2,546.6	5.7	0.028	0.000	87	0	87
Waiau 5	94,262	94,078	184	3.61%	1,090.6	1,076.2	14.4	0.028	0.000	52	0	52
Waiau 6	72,362	72,124	238	4.66%	1,900.6	1,888.1	12.5	0.028	0.000	67	0	67
Waiau 7	241,800	241,404	396	7.76%	3,917.5	3,913.5	4.0	0.028	0.000	111	0	111
Waiau 8	310,975	310,495	480	9.40%	3,007.2	3,000.1	7.1	0.028	0.000	134	0	134
Total	798,307	796,230	2077	40.69%	15,558.2	15,517.0	41.2			582	0	582
<u>CT/DG Units</u>												
Waiau 9	2,836	2,791	45	0.88%	4,787.3	4,787.3	0.0	0.000	85.639	0	0	0
Waiau 10	4,741	4,670	71	1.39%	4,483.0	4,483.0	0.0	0.000	85.639	0	0	0
CIP1	22,862	22,627	235	4.60%	298.8	294.3	4.5	3.143	0.000	7,386	0	7,386
Substation DG	5,166	5,072	94	1.84%	4,336.5	4,336.5	0.0	0.000	0.000	0	0	0
Total	35,605	35,160	445	8.72%	13,905.6	13,901.1	4.5			7,386	0	7,386
Total	833,912	831,390	2522	49.41%	29,463.8	29,418.1	45.7			7,968	0	7,968
<u>IPP</u>												
AES	892,190	892,190	0	0.00%	4,301.1	4,301.1	0.0	0.000	0.000	0	0	0
KPLP	948,235	948,206	29	0.57%	9,624.6	9,624.6	0.0	0.000	0.000	0	0	0
H-POWER	192,938	192,938	0	0.00%	13,509.2	13,509.2	0.0	0.000	0.000	0	0	0
Total	2,033,363	2,033,334	29	0.57%	27,434.9	27,434.9	0.0			0	0	0
TOTAL	5,295,221	5,290,117	5,104	100.00%	117,728.8	117,661.1	67.7			8,683	0	8,683
Total Avoided Cost, ¢/kwh											0.170	



# HECO Avoided On-Peak O&M based on 1 MW Simulation

## SUMMARY STATISTICS

UNIT TYPE	% Avoided MWH	Rate (¢/kwh)		
		Consum.	Maint.	Net
HECO				
Steam	90.71%	0.028	0.000	0.028
CTs	8.72%	1.660	0.000	1.660
AES	0.00%	0.000	0.000	0.000
KPLP	0.57%	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000
TOTAL	100.00%			0.170

Note:

Unit Rates = Total O&M \$/Avoided Unit MWH

Net Rates = Unit Rates \* % Avoided MWH

HECO Avoided Total O&M based on 1 MW Simulation

Total	MWH			% of Total			Hours of operation			O&M Rates			Avoided O&M Costs, \$		
	Base	QF in	Diff.		Diff.		Base	QF in	Diff.	Consum.	Maint.	(\$/Hr)	Consum.	Maint.	Total
<u>Honolulu</u>															
Steam Units															
Honolulu 8	88,350	88,314	36	0.41%			677.4	676.2	1.2	0.028	0.000		10	0	10
Honolulu 9	71,317	71,012	305	3.48%			43,015.5	43,002.2	13.3	0.028	0.000		85	0	85
Total	159,667	159,326	341	3.89%			43,692.9	43,678.4	14.5				95	0	95
<u>Kahe</u>															
Steam Units															
Kahe 1	350,309	349,767	542	6.19%			3,219.3	3,214.8	4.5	0.028	0.000		152	0	152
Kahe 2	394,810	394,061	749	8.56%			3,479.7	3,472.9	6.8	0.028	0.000		210	0	210
Kahe 3	551,531	550,815	716	8.18%			7,312.7	7,312.7	0.0	0.028	0.000		200	0	200
Kahe 4	533,373	532,645	728	8.32%			7,350.3	7,350.3	0.0	0.028	0.000		204	0	204
Kahe 5	918,722	917,821	901	10.29%			7,793.7	7,793.7	0.0	0.028	0.000		252	0	252
Kahe 6	656,439	655,312	1,127	12.87%			7,637.5	7,637.5	0.0	0.028	0.000		316	0	316
Total	3,405,184	3,400,421	4,763	54.40%			36,793.2	36,781.9	11.3				1,334	0	1,334
<u>Waiau</u>															
Steam Units															
Waiau 3	38,858	38,349	509	5.81%			3,220.4	3,221.6	-1.2	0.028	0.000		143	0	143
Waiau 4	49,019	48,653	366	4.18%			2,771.5	2,763.4	8.1	0.028	0.000		102	0	102
Waiau 5	110,162	109,976	186	2.12%			1,787.1	1,772.8	14.3	0.028	0.000		52	0	52
Waiau 6	82,208	81,938	270	3.08%			2,330.6	2,316.9	13.7	0.028	0.000		76	0	76
Waiau 7	366,462	365,951	511	5.84%			7,337.0	7,333.0	4.0	0.028	0.000		143	0	143
Waiau 8	462,187	461,386	801	9.15%			6,209.3	6,202.2	7.1	0.028	0.000		224	0	224
Total	1,108,896	1,106,253	2,643	30.19%			23,655.9	23,609.9	46.0				740	0	740
CT/DG Units															
Waiau 9	2,955	2,907	48	0.55%			4,800.4	4,800.2	0.2	0.000	85.639		0	17	17
Waiau 10	4,967	4,892	75	0.86%			4,513.0	4,512.5	0.5	0.000	85.639		0	43	43
CIP1	25,094	24,877	217	2.48%			355.3	351.3	4.0	3.143	0.000		6,820	0	6,820
Substation DG	5,431	5,328	103	1.18%			4,388.8	4,387.3	1.5	0.000	0.000		0	0	0
Total	38,447	38,004	443	5.06%			14,057.5	14,051.3	6.2				6,820	60	6,880
Total	1,147,343	1,144,257	3,086	35.25%			37,713.4	37,661.2	52.2				7,560	60	7,620
IPP															
AES	1,529,468	1,529,468	0	0.00%			7,895.7	7,895.7	0.0	0.000	0.000		0	0	0
KPLP	1,480,549	1,479,984	565	6.45%			17,727.3	17,727.3	0.0	0.000	0.000		0	0	0
H-POWER	330,751	330,751	0	0.00%			16,606.7	16,606.7	0.0	0.000	0.000		0	0	0
Total	3,340,768	3,340,203	565	6.45%			42,229.7	42,229.7	0.0				0	0	0
TOTAL	8,052,962	8,044,207	8,755	100.00%			160,429.2	160,351.2	78.0				8,989	60	9,049

Total Avoided Cost, ¢/kwh 0.103

HECO Avoided Total O&M based on 1 MW Simulation  
**SUMMARY STATISTICS**

UNIT TYPE	% Avoided MWH	Rate (¢/kwh)		
		Consum.	Maint.	Net
HECO				
Steam	88.49%	0.028	0.000	0.025
CTs	5.06%	1.540	0.014	0.079
AES	0.00%	0.000	0.000	0.000
KPLP	6.45%	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000
TOTAL	100.00%			0.104

Note:

Unit Rates = Total O&M \$/Avoided Unit MWH

Net Rates = Unit Rates \* % Avoided MWH